一屬一種ニシテ專ラ暖海ニ產ス；下ニ記スルモノ即チ是ナリ．　本屬ハ從來 Zonaria (しまあふぎ屬), Spathoglossun (こもんぐさ屬) 等ト混ゼラレタレドモ，Zonariaハ「パラチマタ」(毛狀體) ナキヲ以テ之ト異ナリ，Spathglossunハ重圈狀線ナキヲ以テ異ナリトス．　屬ノ名ハ Stypos (毛茸ヲ有スル) ト Podus (足) トヨリ成ル，即チ體ノ下部ニ毛茸アルニヨルナリ．

Stypopodium lobatum Kuetz.

ちがみぐさ　岡村稱．

第XXV圖版，1-8圖．

體ハ直立シ，下部毛茸ヲ存シ，老成セルモノハ厚キ膜狀ニシテ下部稍莖ノ如キ觀ヲ呈ス，而シテ稍掌狀ニ分レ或ハ放射狀ニ分裂シ，裂片長キ楔形ニシテ互ニ相重リ，各裂片ヲ擴ゲタル形ハ扇狀ナリ，重圈狀線アリ；高サ 20-25 cm. ニ達シ，小ナルハ 4-5 cm. ナルアリ．　子囊群ハ重圈狀線ノ間ニ幅濶キ斑狀ヲ作リ，體ノ兩面ニアレドモ，或ハ全ク裏面ニノミアルモノアリ．毛狀體(パラチマタ)ハ幼キ部分ノ重圈狀線ニ沿ヒテ生ズ．　體質ハ膜質ニシテ紙ニ付着セズ．　色ハ綠褐色又ハ黃褐色ナリ．

產地：十四尋ノ深處ナル底網ニカヽレリ(野母付近字高瀨)，琉球(黑岩氏)，坊岬(薩摩)，牛深(天草)，野母，長崎灣口．

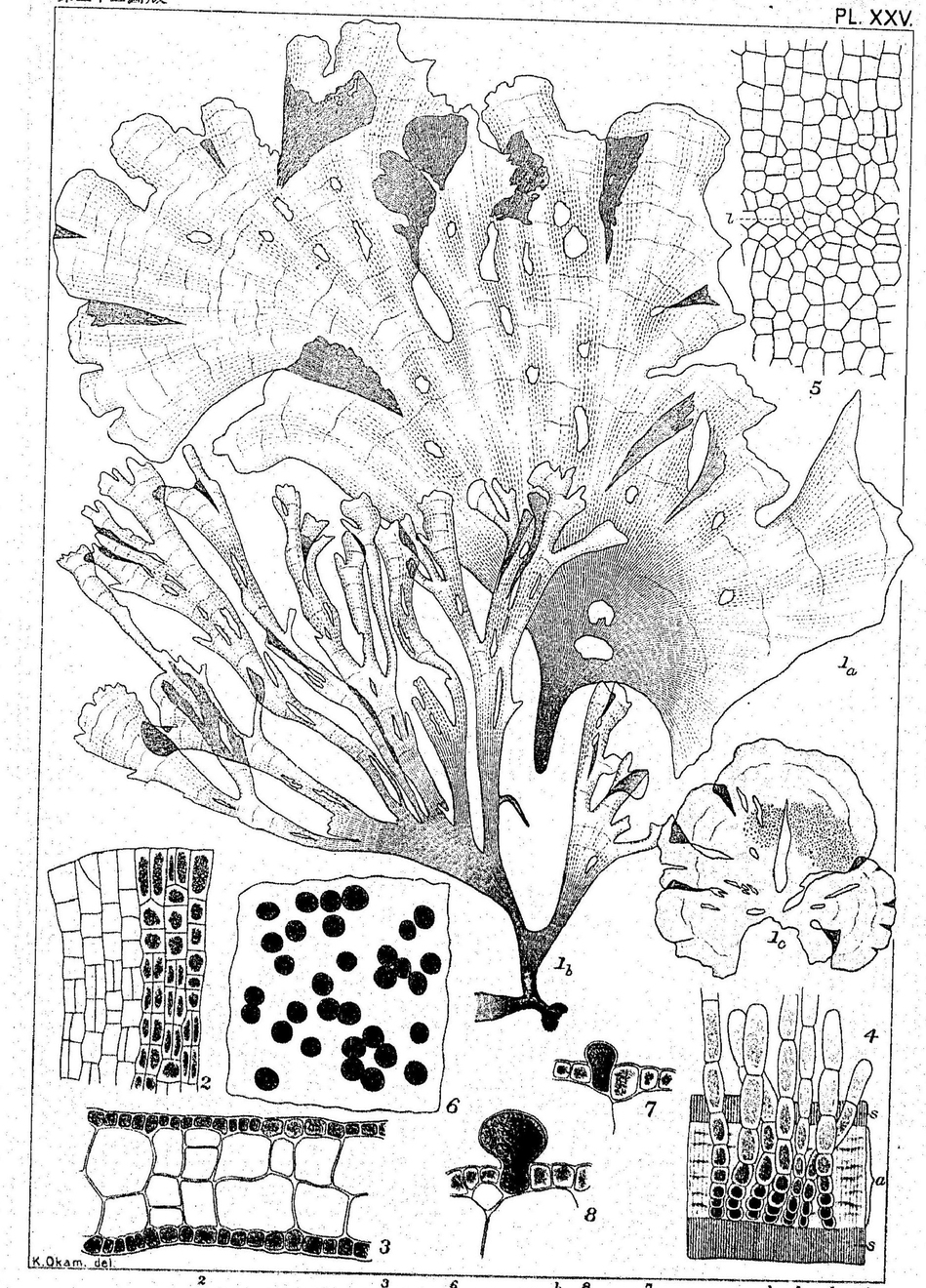
子囊群：—夏季．

分布：喜望峰，カナリー諸島，テネリフ，ブラジル，プエルトリコ，グアデループ，ガラパゴス島，日本．

第XXV圖版．1：ちがみぐさ；*a*，野母產；*b*，琉球產；*c*，坊產，

第二十五圖版

PL. XXV.



Stypopodium lobatum Kuetz. ぢがみぐさ

實ヲ有スルモノ; $\frac{1}{1}$.—**2**: 成長線ヲ示セル體ノ表面, $\frac{220}{1}$.—**3**: 體ノ幼キ部分ノ横斷面, $\frac{175}{1}$.—**4**: 重圈狀線ニ沿ヒテ生ズル毛狀體ヲ上ヨリ見タルモノ; *s*, *s*, 體ノ表面; *a*, 表皮細胞ノキユーチクル層ノ剝脫シタルモノ (毛ガ表皮細胞ヨリ生ジタル爲メ押上ゲラレテ) $\frac{220}{1}$.—**5**: 重圈狀線ニ生ジタル毛狀體ノ落チタル痕ヲ示セル體ノ表面, $\frac{220}{1}$.—**6**: 子嚢群ノ一部, $\frac{54}{1}$.—**7**: 幼キ子嚢, $\frac{220}{1}$.—**8**: 同上ノ稍進ミタルモノ, $\frac{220}{1}$.

(PL. XXI-XXV, December, 1907).

TO THE READER!

Since Nov. 1900, I had published "*Illustrations of the Marine Algae of Japan*," which, however, had unfortunately to be discontinued after the issue of only 6 numbers (Pl. I—XXX). The present ICONES which is published by very limited fund of the author may be considered as continuation of that "*Illustrations*."

Descriptions in English are limited to those plants which are either new or little known among the alglogists of the world.

The literature which are quoted under each species are restricted only to those which the author had chance to consult with.

緒　　言

明治三十三年十一月以來予ハ日本海藻圖說ヲ敬業社ヨリ出版シタレドモ,不幸ニシテ僅ニ第一卷第六冊迄(第三十圖版ニ至ル)ヲ出シテ中絶スルコトヽナリヌ. 爾來是ガ再興ヲ企圖シタリシカドモ何レノ書肆モ利益ノ如何ヲ打算シテ,敢テ之ガ出版ノ難キニ當ルモノアラズ. 茲ニ於テ,予元ヨリ資金ノ富裕ナルモノアラズト雖モ,獨力之ガ經營ニ從事シ,以テ此學ノ爲ニ微衷ヲ盡サント決セリ. 是レ此書ヲ發刊シタル所以ナリ.

希クバ,讀者之ヲ諒トシ一日モ永ク此事業ノ繼續ヲ助ケラレンコトヲ.

NOTICE.

Price (inclusive of postage) of the ICONES which contains 5 plates in every number is 3 MK. for abroad.

Remittances from abroad to be made by Postal Money Order, payable to

K. Okamura, No. 67 Tansumachi, Azabu, Tokyo.

Z. P. Maruya & Co., 14-16, Nihonbashi Tōri Sanchōme, Tokyo.

定價: 各集圖版五枚ニ就キ壹部金壹圓(外ニ郵稅)

明治四十年十二月廿六日發行
明治四十年十二月廿一日印刷

不許複製

著作者兼發行者　岡村金太郎　東京麻布區笄町六十七番地　振替貯金口座壹〇九參六
印刷者　中村彌助　東京市京橋區日吉町十番地
印刷所　近藤商店活版部　東京市京橋區日吉町十番地
發賣所　丸善株式會社　東京市日本橋區通三丁目　大阪市心齋橋筋博勞町西入丁目　振替貯金口座(東京五番大阪七四番)

日本藻類圖譜

第一卷第六集

理學博士　岡村金太郎著

ICONES OF JAPANESE ALGÆ.

Vol. I. No. VI.

BY

K. Okamura *Rigakuhakushi.*

Contents of No. VI. (Pl. XXVI—XXX.)

Nitophyllum uncinatum (Turn.) J. Ag.	かぎうすばのり
Pterosiphonia pennata (Roth) Fkbg.	はねぐさ
Endocladia complanata Harv.	いそだんつう
Asparagopsis Sanfordiana Harv.	かぎけのり
Delisia japonica Okam. n. sp.	たまいたゞき
Scytosiphon lomentarius (Lyngb.) J. Ag.	かやものり

Published

by

THE AUTHOR.

February, 1908.

Tokyo.

明治 41 2 22 内交

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品　第二帙

FASCICULUS II.

51. Porphyra suborbiculata Kjellm.
52. Batrachospermum moniliforme Roth.
53. Batrachospermum virgatum (Kuetz.) Sirod.
54. Batrachospermum Gallaei Sirod.
55. Yatabella hirsuta Okam.
56. Endocladia complanata Harv.
57. Gigartina Teedii (Roth) Lamour.
58. Gigartina intermedia Suring.
59. Eucheuma spinosum (L.) J. Ag.
60. Ceratodictyon spongiosum Zanard.
61. Gracilaria confervoides (L.) Grev.
62. Hypnea seticulosa J. Ag.
63. Hypnea Saidana Holmes.
64. Gastroclonium ovale (Huds.) Kuetz.
65. Erythrocolon Muelleri (Sond.) J. Ag.
66. Nitophyllum uncinatum (Turn.) J. Ag.
67. Caloglossa Leprieurii (Mont.) J. Ag. Var. continua Okam. Nov. Var.
68. Caloglossa ogasawaraensis Okam.
69. Acrocystis nana Zanard.
70. Polysiphonia fragilis Suring.
71. Pterosiphonia pennata (Roth) Fkbg.
72. Symphyocladia Marchantioides (Harv.) Fkbg.
73. Rhodomela Larix (Turn.) Ag.
74. Herposiphonia fissidentoides (Holmes) Okam.
75. Heterosiphonia pulchra (Okam.) Fkbg.
76. Ptilota pectinata (Gunn.) Kjellm. f. typica Kjellm.
77. Carpoblepharis Schmitziana (Rbd.) Okam.
78. Ceramium clavulatum Ag.
79. Microcladia corallinae (Mart.) Okam.
80. Campylaephora Hypnaeoides J. Ag.
81. Gloiopeltis cervicornis (Suring.) Schmitz.
82. Peyssonnelia caulifera Okam.
83. Corallina radiata Yendo.
84. Zonaria Diesingiana J. Ag.
85. Scytosiphon lomentarius (Lyngb.) J. Ag.
86. Endarachne Binghamiae J. Ag.
87. Cladosiphon decipiens (Suring.) Okam.
88. Cylindrocarpus rugosa Okam. Sp. Nov.
89. Leathesia difformis (L.) Aresh.
90. Mesogloea crassa Suring.
91. Chordaria abietina Rupr.
92. Ulva conglobata Kjellm.
93. Chaetomorpha crassa (Ag.) Kuetz.
94. Chaetomorpha spiralis Okam. Sp. Nov.
95. Caulerpa ambigua Okam.
96. Chlorodesmis comosa Bail. et Harv.
97. Codium adhaerens (Cabr.) Ag.
98. Rhipidiphyllon reticulatum (Ask.) Heydr.
99. Boodlea coacta (Dickie) Murr. et De Toni.
100. Brachytrichia Quoyi (Ag.) Born. et Flah.

NOTICE.

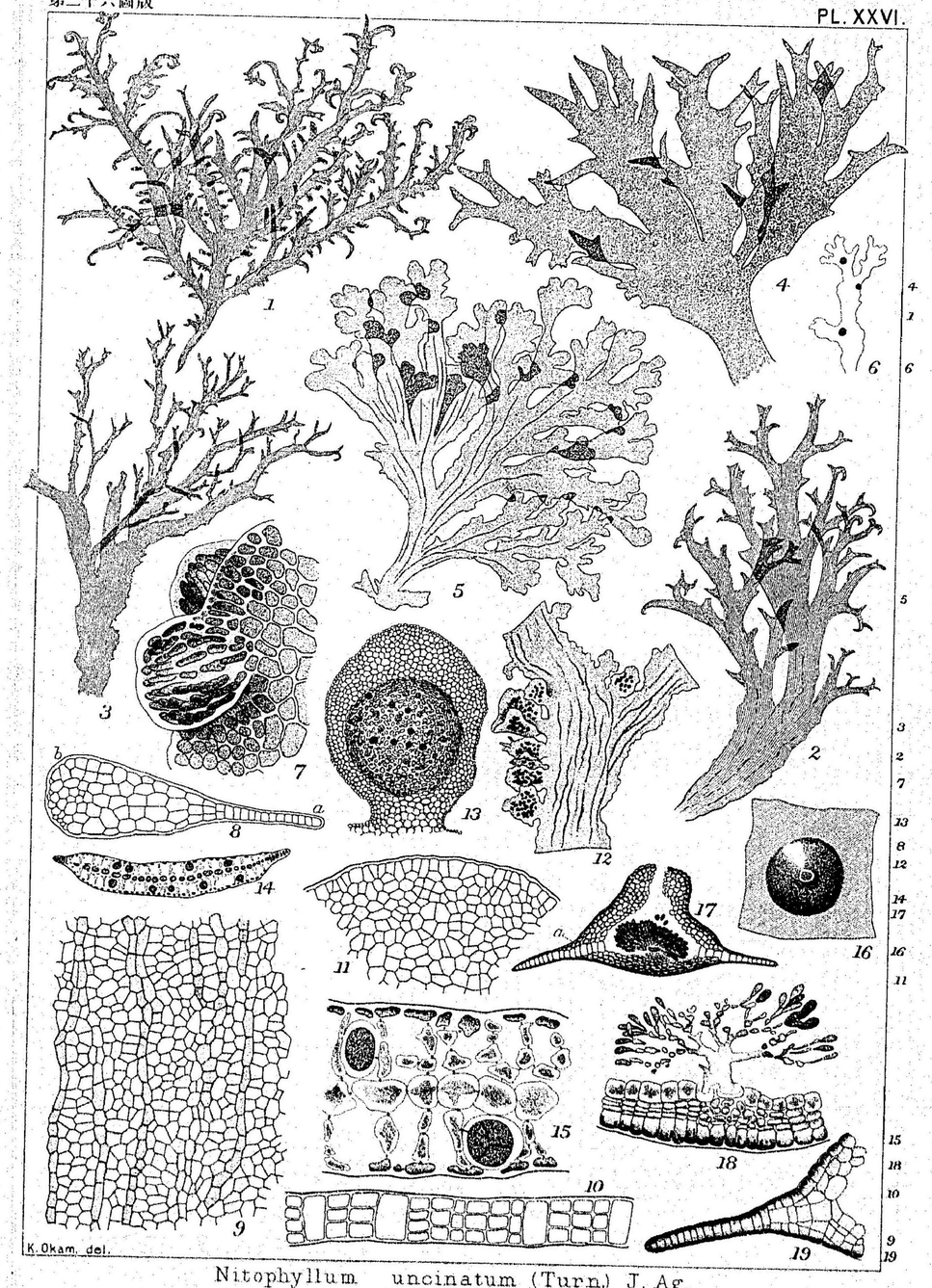
Price (exclusive of postage) of every Fasciculus:—30 m.k. = 30 shill. = 37.5 fr. = $ 7.50.

Subscribers to be addressed to the author:

No. 4, Ni-chomé, Shin-Ogawamachi, Ushigome, Tokyo, Japan.

第二十六圖版

PL. XXVI.



Nitophyllum uncinatum (Turn.) J. Ag.
ぬぎうすばのり

Nitophyllum uncinatum (Turn.) J. Ag.

Nom. Jap.: *Kagi-usuba-nori.*

PL. XXVI.

Nitophyllum uncinatum (Turn.) J. Ag. Sp. Alg. II, p. 654; Id. Epicr. p. 465; Ardiss. Phyc. Medit. I, p. 255; Id., Florid. Ital. Vol. II, p. 48, Tav. VIII, Fig. 2; De Toni Syll. Alg. IV, p. 650; Hauck Meeresalg. p. 171; Nott Nitophylla of Calif. (Proceed. of Calif. Acad. Sc. Vol. II, 1900), p. 26, Pl. III, Fig. 12; Okam. Alg. Jap. Exsic. (岡村, 日本海藻標品) Fasc. II, No. 66; 岡村, 日本藻類名彙 p. 49.—*Fucus laceratus var. uncinatus* Turn. Hist. Fuci tab. 68, fig. c-d.—*Cryptopleura lacerata* Kuetz. Tab. Phyc. XVI, tab. 25, fig. e.—*Acrosorium aglaophylloides* Zanard. in Kuetz. Tab. Phyc. XIX, t. 10, f. a-b?

Hab.: Mostly grown upon the branches of *Sargassum* in the calm water; Provs. Iyo, Tango, Shima, Tōtōmi, Sagami, Bōshyū, Hitachi, Iwaki. Tetraspores and cystocarps: June—July (Bōshyū).

PL. XXVI. Fig. **1-5**: portions of different forms of *Nitophyllum uncinatum*; Fig. 1, a typical form bearing tetrasporic sori; veinlets in fig. 5 too strongly represented; $\frac{1}{1}$.—Fig. **6**: portion of the typical frond bearing cystocarps, $\frac{1}{1}$.—Fig. **7**: two marginal root-like processes, $\frac{220}{1}$.—Fig. **8**: cross-section of uncinated portion of frond; *a*, outer-; *b*, inner-side, $\frac{54}{1}$.—Fig. **9**: surface-view of frond showing veinlets, $\frac{54}{1}$.—Fig. **10**: cross-section of frond, $\frac{91}{1}$.—Fig. **11**: surface-view of the growing margin of frond, $\frac{220}{1}$.—Fig. **12**: portion of frond showing sporophylls, $\frac{3}{1}$.—Fig. **13**: surface-view of a tetrasporic sorus, $\frac{22}{1}$.—Fig. **14**: cross-section of a sporophyll, $\frac{22}{1}$.—Fig. **15**: portion of fig. 14, magd. to show the formation of tetrasporangia from the cells of the intermediate layer, $\frac{134}{1}$.—Fig. **16**: cystocarp viewed from

above, magd.—Fig. **17**: vertical section of a cystocarp, $\frac{22}{1}$.—Fig. **18**: "Stielzelle" and spores, $\frac{91}{1}$.—Fig. **19**: portion of pericarp marked *a* in fig. 17, $\frac{54}{1}$.

Nitophyllum Greville 1830.

うすばのり屬.

NITOPHYLLEAE (DELESSERIACEAE).

うすばのり亞科（このはのり科）.

體ハ扁平ニシテ葉狀，下部時トシテハ莖ヲナシ，分裂スルコトナク，或ハ叉狀又ハ種々ニ分裂シ若クハ分枝ス；體ハ極メテ薄クシテ，時ニ一層ノ細胞ヨリ成リ或ハ稍厚シ（殊ニ下部ニ於テ然リ）；其一層以上ノ厚ミヲ有スルモノニアリテハ細胞列ハ體ノ表面ニ直角ヲナシ決シテ枝ヲ分ツコトナシ；而シテ體ノ表面ニハ細脈ナキアリ或ハ之ヲ有スルアリ，其之アルトキハ脈ハ或ハ分枝シ或ハ網狀ヲナシ，時ニハ又（殊ニ下部ニ於テ）明ニ分枝シタル且往々網狀ヲナセル稍太キ脈ヲナスモノアリ；其中時トシテハ一，二ノモノ中肋ノ如キ觀ヲ呈シテ稍太ク特ニ著明ナルコトアリ. 成長緣ニテハ成長點ハ早晩不明トナレドモ，時トシテ永キ後マデ稍明ナルコトアリ；體ノ表面成長ハ各細胞ノ各方面ニ介生的分裂ヲナスコトニヨリテ成サル；第二次ニ生ズル細脈ハ成長點ヨリスルニアラズ.[1]

四分胞子囊ハ圓形ノ群ヲナシテ體ノ兩面ニ生ジ，其部ハ少シク增厚シテ扁ク隆起ス；而シテ群ハ體ノ表面ニ種々ニ形成セラル. 胎原ハ體ノ表面ニ散布シテ生ジ，多クハ細脈ト關係ナシ. 囊果ハ體ノ表面ニ散在シ，時トシテハ後ニ細脈又ハ稍太キ脈上ニ坐スルコトアリ，（其所ノ如クナルモ，決シテ其始メ形成セラルヽ時ニ當テ脈上ニアルニアラザルコトハ胎原ノ脈ト關係ナキヲ以テ知ルベシ，故ニ"後ニ"ト記セリ）；而シテ稍半球狀ヲナシテ，體ノ兩面ニ膨起ス. 胎座ハ概テ甚シク小ニシテ不明ナレドモ其中央ヨリ大ナル仁柄細胞立チ，之ヨリ胞子絲ヲ發出ス；胞子ヲ形成スル絲ハ可成リ多ク且ツ分岐シテ多少綾ク結合セラル；胞子ハ胞子絲ノ頂端ニ生ズルカ或ハ二三個連鎖シ，同時ニ若クハ相前後シテ胞子ヲ熟シ，仁ハ球狀又ハ稍腎臟形ノ單塊ヲナス.

約五六十種アリテ諸所ノ海ニ產ス. 此屬ノ種類ハ甚シク形狀ヲ異ニスルモノアルヲ以テ各種ニ就テ充分精細ナル研究ヲナス時ハ數多ノ屬ニ分タルヽヲ必スレドモ，從來未ダ之ガ根本的正當ナル分類ヲ見出スコト能ハザルナリ.

屬ノ名ハ Niteo（輝ク）ト Phyllon（葉）トヨリ成ル，即チ光澤アル葉ノ意ナリ.

[1] 第二次ニ生ズルモノト云フハ第一次即チ始ヨリ生セラルヽニアラデ，初ヨリアル脈ノ外ニ更ニ細脈チナスモノナルガ故ニ，多クハ第一次ノ細脈以外ノ細胞ヨリ成ルナリ.

Nitophyllum uncinatum (Turn.) J. Ag.

かぎうすばのり　岡村稱

第XXVI圖版.

體ハ概テ下部ヲ以テ他ノ海藻上ニ匍匐シ，其游離部ヲ以テ直立スト雖モ，或ハ下部僅ニ匍匐シテ殆ド直立セル如キアリ，然レドモ決シテ莖ヲ有スルコトナク，又中肋ヲ存スルコトナシ. 體ハ線狀ニシテ極メテ薄ク，表面ニ縱走セル顯微鏡的細脈ヲ有ス；脈ハ極メテ細微ナルヲ以テ往々肉眼ニテ見ル能ハザレドモ，或ハ僅ニ見ラルヽモアリ；而シテ所々枝ヲ分チ稍網狀ヲナス. 分枝法ハ不規則ナル羽狀ニシテ，所々叉狀ヲナスコトアリ，此處ニ互生シ又對生シ，彼處ニ叉狀ヲナシ又掌狀ヲナス等極メテ一定ナラズ；幅モ概テ狹細ナルヲ常トスレドモ，

往々濶キモアリ隨テ幾分線狀ナラズシテ楔形ヲナスモノアリ;或ハ下半部ハ濶クシテ上部ノ枝ハ漸次細クナレルモアリ;枝ノ頂端ハ概ネ尖鋭ナルヲ常トスレドモ,又處々稍開張シテ鈍圓ヲナスモノ少ナシトセズ,而シテ多少下方ニ灣曲シテ鉤狀ヲナス傾向アリ;此鉤狀部ハ概ネ枝端ニアルヲ常トスレドモ或ハ枝ノ緣邊ニ之ヲ存スルアリ. 此鉤狀部ヲ以テ枝ハ互ニ纏絡シ,或ハ他ノ海藻ニ卷絡ス;故ヲ以テ,鉤狀部ノ內側ハ接觸刺擊ニヨリテ其卷絡ヲ有效ナラシムル爲メ增厚スルコト第8圖ニ見ルガ如シ. 枝ハ此裝置ニ依リテ互ニ纏フノミナラズ,又體ノ緣邊ヨリ往々根樣突起ヲ出シテ互ニ癒着シ,或ハ他體ニ固着ス(7圖). 體ノ長サハ一定セザレドモ約10-15 cm.ニ達シ,幅ハ3-12 mm.アリ. 體ノ緣邊ハ全緣若クハ微細ナル鋸齒ヲ存スルコトアリ.

四分胞子囊ハ體ノ兩緣ヨリ生ズル小サキ裂片ノ頂端下ニ圓キ群ヲナシテ其兩面ニ生ジ,其部ハ少シク增厚ス;此裂片ハ特ニ此目的ヲ以テ,體ノ兩緣ヨリ生ジタルモノト見ルベク,又ハ,伸長セザル普通ノ枝トモ見ルベシ. 囊果ハ體ノ緣邊ニ近キ表面ニ生シ,體ノ兩面ニ生ズ,而シテ半球狀ニシテ頂部少シク嘴狀ニ伸ビ以テ開口ス,故ヲ以テ恰モ盃ヲ伏セタルガ如キ狀ヲ呈ス,罌粟粒大ナリ. 色ハ淡紅色ニシテ極メテ美ナリ. 質ハ薄キ膜質ニシテ乾燥スルトキハ不充分ニ紙ニ付着ス.

產地: 多クハほんだわら類ノ枝ニ纏絡ス;靜ナル處ニ多シ. 伊豫新濱,丹後,志摩,遠江,相模,房州根本,常陸,磐城小名濱. 四分胞子及囊果:一六七月(房州).

分布: 地中海;大西洋(カナリー島,英國);喜望峰.

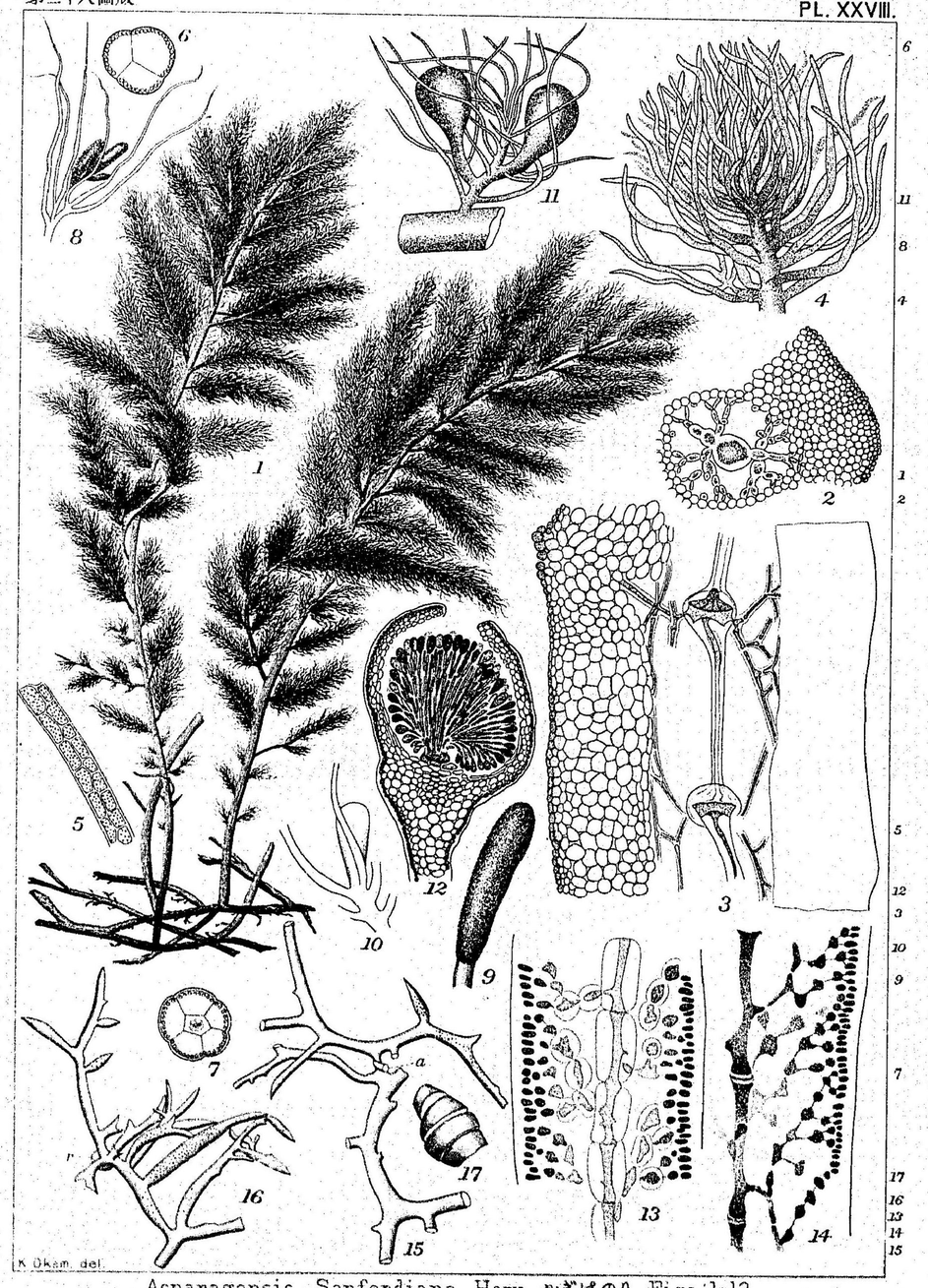
本種ハ多少形狀ヲ異ニスルモノアルヲ以テ,彼是相比スルニアラザレバ,單獨ノ個體ニ就テ種ヲ定ムルコト稍難シト

第二十七圖版

PL. XXVII.

Pterosiphonia pennata (Roth) Fkbg. はねぐさ. Figs. 1-11.
Endocladia complanata Harv. いそだんつう. Figs. 12-20.

第二十八圖版　　PL. XXVIII.



Asparagopsis Sanfordiana Harv. かぎけのり Figs. 1-12.
Endocladia complanata Harv. いそだんつう Figs. 13-17.

スルモノアリ，而シテ本種ニ酷似シタルモノニ N. laceratum (Gmel.) Grev. ト稱スルモノアリ，其性質能ク本種ニ類スレドモ，此ハ縦走セル細脈稍明ニシテ枝端マデ達スルト，體ノ下部短莖ヲナスト，又其胞子群アルモノニテハ，稔子體ノ緣邊ニ沿フテ之ヲ生ジ，後相合一シテ線狀ヲナストヲ以テ異ナリトス.

第XXVI圖版. **1-5**: 種々ノ形狀ヲナセルかぎうすばのりノ體ノ一部，就中第1圖ハ模範トスベク且ツ實アルモノニシテ，4ト5トノ如キハ稍極端ノ形セルモノナリ；第5圖ノ脈ハ少シク强過ギタリ，實際ハ辛フジテ見ユル位ナリ；$\frac{1}{1}$.—**6**: 蘷果ヲ有スル體ノ一片，$\frac{1}{1}$.—**7**: 體ノ緣邊ヨリ根樣突起ヲ生ジタル狀，$\frac{220}{1}$.—**8**: 鉤狀部ノ横斷面；*a*, 鉤ノ外緣；*b*, 內緣；$\frac{54}{1}$.—**9**: 體ノ表面ニ細脈ノ縦走スル狀，$\frac{54}{1}$.—**10**: 體ノ横斷面，$\frac{91}{1}$.—**11**: 體ノ成長端ノ表面，$\frac{220}{1}$.—**12**: 四分胞子群ヲ有スル裂片，$\frac{3}{1}$.—**13**: 四分胞子群ノ表面，$\frac{22}{1}$.—**14**: 四分胞子群ノ横斷面，$\frac{22}{1}$.—**15**: 其一部ヲ廓大シヲ中層ノ細胞ヨリ胞子ヲ生ズル狀ヲ示ス，$\frac{134}{1}$.—**16**: 蘷果ヲ上ヨリ見タルモノ，廓大.—**17**: 蘷果ノ縦斷面，$\frac{22}{1}$.—**18**: 仁柄細胞ヨリ胞子絲ヲ發出スル狀，$\frac{91}{1}$.—**19**: 第17圖ノ*a*部ヲ廓大シテ果皮ノ構造ヲ示ス.

Pterosiphonia pennata (Roth) Fkbg.

Nom. Jap: *Hané-gusa.*

PL. XXVII, Fig. 1-11.

Pterosiphonia pennata (Roth) Fkbg. Rhodom. (1901) p. 263, tab. 2, f. 1-2; De Toni Syll. Alg. IV, p. 998; Okam. Alg. Jap. Exsic. (岡村，日本海藻標品) Fasc. II, No. 71; 岡村，日本藻類名彙 p. 63.

—*Ceramium pennata Roth Catalecta Bot. II, p. III, (1800).*—*Polysiphonia pennata* J. Ag. Alg. Med. p. 141; Id. Sp. Alg. II, p. 928; Kuetz. Sp. Alg. p. 803; Id. Tab. Phyc. XIII, t. 23, f. e-f; Zanard. Icon. Phyc. Adr. III, p. 113, t. 108, A; Ardiss. Phyc. Medit. I, p. 365; Hauck Meeresalg. p. 238.—*Polysiphonia pinnulata* Kuetz. Phyc. Gener. p. 416; Id. Sp. Alg. p. 803; Id. Tab. Phyc. XIII, t. 23, f. a-d?

Hab.: On rocks between tide-marks. Kobama (Prov. Kadzusa), Prov. Sagami. Tetrasporangia:—Spring.

Pl. XXVII, Fig. 1-11. Fig. **1**: fronds of *Pterosiphonia pennata*, $\frac{1}{1}$.—Fig. **2**: lower rooting portion of frond showing roots, *r*, $\frac{12}{1}$.—Fig. **3**: portion of frond to show general appearance of ramification, $\frac{5}{1}$.—Fig. **4**: portion of frond showing the arrangement of simple and compound pinnae rising from every second joint, $\frac{54}{1}$.—Fig. **5**: apical growing portion of frond with the apical cell, *a*; the distichous arrangement of branches is here slightly disturbed as it is seen in that of the uppermost two young branches, $\frac{340}{1}$.—Fig. **6**: surface-view of a branch showing the congenital growth, $\frac{220}{1}$.—Fig. **7-9**: cross-sections of different parts of different branches; Fig. 9 shows the section of congenitally united portion; $\frac{220}{1}$.—Fig. **10**: portion of branch showing tetrasporiferous ramuli, $\frac{42}{1}$.—Fig. **11**: cross-section of a ramulus bearing tetrasporangia; *a*, central axis; *p*, pericentral cell which carries a tetrasporangium (not shown in the figure) above; *d*, *d*, cover-cells of a tetrasporangium, $\frac{220}{1}$.

Pterosiphonia Falkenberg 1889.

はねぐさ屬.

POLYSIPHONIEAE (RHODOMELACEAE).

いとぐさ亞科 (ふぢまつも科).

體ハ直立シ又ハ匍匐セル根莖ヲ以テ直立シ,扁圓又ハ扁平ニシテ兩縁ヨリ枝ヲ互生ス,細胞組織ニテナル. 周心細胞ハ5-12條ニシテ明ニ横ニ關節シ,終世皮層細胞ヲ被ラズシテ裸出シ,或ハ早晩之ヲ以テ蔽ハル;皮層細胞ハ多少厚キ層ヲナシ,内部ハ大ニシテ外方ニ小ナル細胞ヲ以テ成ル. 枝ハ長キ又ハ短キ,太キ又ハ細キ刺狀ヲナセルモノト早晩限リアル伸長ヲナスベキ側枝トヲ互生シテ羽狀ヲナス,而シテ側枝モ亦同樣ニ羽狀ヲナシ,其狀恰モ上部ニ羽狀ヲナセル刺狀枝ノ如シ. 刺狀枝ハ其基部ニ於テ主枝ト多少癒着シ,以テ主枝ノ兩側ニ翼ヲ添ヘタル如クナラシム. 頂端成長ハ單基的ニシテ明ナル成長點細胞ヲ有シ,其下ナル關節細胞ハ盤狀ヲナシ,或ハ一側面ニ膨起シ,此部ヨリ枝ヲ生ズ. 單管ノ毛狀葉ハ決シテ成長點附近ニ生ズルコトナシ.

生殖器ハ上部ノ枝ニ生ズ. 四分胞子嚢ハ主枝ノ扁平ナル側面ニ沿ヒ,又ハ單一ナル若クハ羽狀ヲナセル刺狀枝ニ沿ヒテ多數ニ形成セラレ,連續セル若クハ斷續セル眞直ナル縦列ヲナシ,各關節ニ一個ヲ藏ス;而シテ枝ノ基部往々互ニ癒着スルモノアルヲ以テ,之ガ爲ニ時トシテハ恰モ二縦列ノ如クナルアリ;四分胞子嚢ハ僅ニ隆起シ,多クハ三個ノ不同長ナル蓋細胞ヲ以テ蔽ハル. 精子器ハ知ラレズ. 胎原ハ細長キ枝ニ生ジ,數ハ一定スルコトナク,刺狀枝ト交互シテ生ジ,胎原列ノ周圍ヲ繞ラスニ細胞ヲ以テスルニヨリテ稍太シ. 嚢果ハ卵形ニシテ枝ノ側面ニ坐シ,果皮ハ可ナリ厚シ.

約 10 種アリテ諸所ノ海ニ産ス. 本邦亦二,三ノ種アリ.

屬ノ名ハ pteron (翼) ト sipho (管) トヨリ成ル,即チ周心細胞ヨリ成レル枝相癒着シテ幾分扁平ニ開張スレバナリ.

Pterosiphonia pennata (Roth) Fkbg.

はねぐさ　　岡村稱.

第 XXVII 圖版, 1-11 圖.

體ハ概子 3-6 *cm.* 高ク,罕ニ尙ホ高キアリ,絲狀ニシテ下部ハ匍匐セル莖ヲナシ,之ヨリ直立スル體ヲ生ズ. 各枝ノ輪廓ハ線狀ニシテ,兩緣ヨリ羽狀或ハ再羽狀ヲナス;小羽枝ハ單條ナルアリ又ハ最末羽狀ヲ分ツアリ,此モノ後發育伸長シテ大ナル枝トナリ以テ枝態ヲ複雜ナラシム. 小羽枝ハ各二關節ヲ距テヽ出デ,下部ニアルモノハ廣開シ,成長點附近ニアルモノハ著シク內方ニ屈曲ス,而シテ稍太キ基部ヨリ漸次上方ニ細リ,長クシテ柔軟ナリ. 體ハ皮層細胞ナキヲ以テ關節ハ各部ニ明ニシテ,長サハ其直徑ノ三分一程ナルコトアリ,或ハ稍長キコトアリ,而シテ枝ノ橫斷面ハ概子 8-9 個ノ周心細胞ヲ存ス,其各細胞畧同大ナリ. 四分胞子囊ハ單條ノ小羽枝ニ生ジ一縱列ヲナス. 色ハ新鮮ノ時ハ紅褐色ナレドモ,乾燥スルトキハ黑變ス. 質柔軟ニシテ僅ニ强靭ナレドモ,乾燥スルトキハ稍硬クナリ,脆クシテ紙ニ付着スルコトナシ.

はねぐさノ名ハ小羽枝ノ羽狀ヲナスニ取レリ.

產地: 潮線間ノ岩石ニ生ズ. 上總小濱,相模. (此他暖流區域內ニ尙ホ多クカルベシ) 四分胞子囊:—春季.

分布: 大西洋溫暖部(佛國,イスパニア,亞弗利加;地中海(佛國沿岸,伊國,コルシカ,シヽリー,サルジニア);アドリアチック海(ダルマシア);ニウホルランド.

第 XXVII 圖版, 1-11 圖. **1**: はねぐさノ叢, $\frac{1}{1}$.—**2**: 體ノ下部匍匐シテ根, *r*, ヲ出セル狀, $\frac{12}{1}$.—**3**: 枝態ノ全般ヲ示セルモノ, $\frac{5}{1}$.—**4**: 單條及複條ノ羽枝ガ各二個ノ關節ヲ距テヽ出ル狀ヲ示ス, $\frac{54}{1}$.—**5**: 體ノ成長端; *a*, 頂細胞; 枝ノ兩緣ヨリ正シク出ル排置ノ少シク亂レタルコトハ最上位ニアル二個ノ枝ノ出方ニ就テ見ルベシ, $\frac{340}{1}$.—**6**: 枝ノ下部ノ癒着スル狀, $\frac{220}{1}$.—**7-9**: 別々ノ枝ノ各部ノ橫斷面; 9 圖ハ癒着シタル部分ノ橫斷面, $\frac{220}{1}$.—**10**: 四分胞子囊ヲ有スル枝ノ一部, $\frac{42}{1}$.—**11**: 四分胞子囊ヲ有スル枝ノ橫斷面; *a*, 中軸; *p*, 周心細胞ニシテ,此細胞ヨリ四分胞子囊ヲ生ジ,之ヲ其上ニ戴ク(圖ニハ四分胞子囊ハナシ,縱斷面ニアラザレバ此關係ヲ示ス能ハズ; *p* ハ即チ四分胞子囊ノ下ノ細胞ナリ); *d*, *d*, 蓋細胞, $\frac{220}{1}$.

Endocladia complanata Harv.

Nom. Jap.: *Iso-dantsū.*

PL. XXVII, Fig. 12-20; PL. XXVIII, Fig. 13-17.

Endocladia complanata Harv. Char. of new Algae n. 37; J. Ag. Epicr. p. 559 (nomen); De Toni Phyc. Jap. Nov. (1895) p. 23; Id. Syll. Alg. IV, p. 177; Okam. Alg. Jap. Exsic. (岡村, 日本海藻標品) Fasc. II, no. 56; 岡村, 日本藻類名彙 p. 23.

Diagn. Fronds dwarf, gregarious, forming widely spreading patches, filiform, terete or slightly compressed, with very irregularly dichotomo-pinnate often recurved branches. Branches sharply pointed, spine-like, often dilated above into cuneate segments with fimbriated apices, and unite and entangle to each other by the formation of root-

like processes from the places where they come in contact. Tetrasporangia densely collected in slightly thickened branchlets.

Hab.: Densely aggregated on the rocks at high tide. Common along the Pacific coast of this country from Kyushyu to Cape Kinkwazan. Sori :—Early in summar.

Fronds dwarf, gregarious forming widely spreading patches of dense and soft mat, erect or rising from secondarily decumbent and rooting filaments, terete or slightly compressed, often complanated above. Ramification very irregular being between pinnate and dichotomous; some of branches are more or less elongated and pinnate, but usually more shortened and furnished with simple or branched, shorter or longer spine-like branchlets; they are usually strongly recurved. Often branches and branchlets slightly dilate upwards into subcuneate segments and become densely decompounded in subdichotomous manner as if crispated, being toothed on the upper margin (Fig. 16). Branches of every order taper into sharp points rising from equally broader bases and attach themselves to substratum or fuse to each other by forming root-like attachments at the place where they come in contact; and thus fronds become decumbent. Growing apex of frond is provided with an alternately and obliquely articulated terminal cell, and the frond is constructed by repeatedly dichotomous cortical filaments arising on all sides from the elongated axial cells. Rhizoidal filaments are almost wanting.

Tetrasporangia form nemathecia-like sori in slightly thickened branchlets, and also scattered in other segments. Cystocarps unknown. Colour dark reddish brown, changing to almost black in drying. Substance soft but rather harsh to touch when recent, becoming somewhat rigid after drying.

The identification of our plant with Harvey's *Endocladia complanata* was done only by the comparative study of the structure of frond of *Endocladia muricata* from America, knowing neither the original specimens nor their photographs, nor asking anyone abroad to take the trouble of comparing our materials with the original specimen of that species.

Assuming that my identification is correct, I gave the diagnosis of the species above, as Harvey's is too short to determine with.

In De Toni's Syll. Alg. IV, p. 177, *End.? rigens* (Mart.) Grun. (=*Gelidium rigens* Mart.) is suspected to be identical with the present plant. But as the latter is not used as edible sea-weeds among ours, the former might not be same as the latter.

PL. XXVII, Fig. 12-20. Fig. **12**: fronds of *Endocladia complanata* in nat. state and size.—Fig. **13**: rather regularly branching and well elongated frond (from Prov. Mikawa), a little larger than the nat. size.—Fig. **14**: portion of the same, $\frac{5}{1}$.—Fig. **15-16**: portions of ordinary dwarf and irregularly branching fronds (from Prov. Idzu); *a*, place where branches have united to each other; $\frac{10}{1}$.—Fig. **17**: portion of ordinary dwarf frond (from Amakusa Isl.) $\frac{12}{1}$.—Fig. **18**: two root-like processes (on both sides), $\frac{54}{1}$.—Fig. **19**: growing apex of frond, $\frac{250}{1}$.—Fig. **20**: cross-section of frond $\frac{80}{1}$.

PL. XXVIII, Fig. 13-17. Fig. **13-14**: longitudinal section of frond, $\frac{220}{1}$.—Fig. **15**: two pieces of branches coming into cohesion at *a*; one of the branches bearing sori, (from Prov. Mikawa), $\frac{12}{1}$.—Fig. **16**: frond bearing tetrasporic sori (from Amakasu, Isl.); *r*, root, $\frac{12}{1}$.—Fig. **17**: tetraspore, $\frac{850}{1}$.

Endocladia J. Agardh 1841.

いそだんつう屬.

ENDOCLADIEAE (GIGARTINACEAE).

いそだんつう亞科 (すぎのり科).

體ハ圓柱狀ニシテ各方面ニ極メテ多ク分枝シ,小刺若クハ瘤狀ノ突起ヲ以テ蔽ハレ,明ニ絲組織ヨリ成ル: 即チ,可ナリ太キ一條ノ中軸アリテ,之ヨリ斜ニ上方ニ叉狀ニ分レタル枝ヲ分枝ス;此枝內方ニハ稍緩ク排置シテ長キ關節ヨリ成リ,外方ニハ漸々小細胞トナリテ密集シ,終ニ全ク密ニ相接シテ以テ皮層ヲナス;中軸ハ長キ細胞ヨリ成リ,成長端ニアリテハ交互ニ斜面ヲ以テ關節セル頂細胞ヲ有ス;皮部ノ內層ハ叉狀ニ分岐セル短キ關節ヨリ成レル根樣細胞ヲ多少密ニ存シ,中軸モ亦縱走セル同樣ノ細胞ヲ以テ多少密ニ圍繞セラル. 粘質ハ可ナリ多クシテ柔軟ナリ.——四分胞子囊ハ少シク太クナリタル枝ニ生ジ,「テマセーシア」狀ニ膨レタル皮層中ニ散在シ,環狀ニ分裂ス. 胎原ハ內部ノ稍綾ミタル,根樣細胞ノ少ナキ枝ニ多數ニ生ジ,皮層組織ノ中央部ニ存ス,而シテ皮部ヲ形成セル絲ノ側枝トシテ生ズル短キ枝ニ助細胞ト胎原トヲ形成スルモノニシテ,其短キ枝ハ二個(若クハ尙多クノ)細胞ヨリ成リテ往々分叉シ,其頂端ノ細胞肥大シテ一個ノ助細胞トナリ,更ニ此助細胞ヨリ鉤狀ニ屈曲セル三個細胞ヨリ成レル胎原列ヲ其側面ニ生ズ; 胎心細胞ハ其存立極メテ一時的ナリトス. 成胞絲ハ受胎シタル助細胞ヨリ起リ,皮層ノ內部ノ稍綾ミタル組織中ニ於テ專ラ體ノ內部ノ方ニ極メテ盛ニ分岐ス; 而シテ其枝ハ體ノ組織ヲ構成セル細胞列ノ間ニ蔓延シ,相互ニ錯綜シ,屢々此等ノ細胞ト連絡點ヲ形成シテ連絡若クハ癒合シ,斯クテ其末端ニ近ク終點ノ細胞及ビ其關節細胞變ジテ胞子トナル. 仁ハ絲狀細胞ノ不規則ニ錯綜シタル網ニシテ其網目ヲ不規則ニ塡充セル多數ノ胞子ヨリ成ル; 此網ヲ爲ス絲狀細胞中ニハ皮層ヲ作レル分岐シタル絲ノ稍太キモノ特ニ目立テテ見ユ; 仁ハ其周圍ヲ圍繞セル絲組織ナク,體ノ少シク隆起シタル部分ノ中ニ埋在ス. 蘷果ハ枝ノ頂端ニ近ク其側面ニ輕ク膨大シテ生ジ,短キ刺ヲ戴ク. 果皮ハ其部ノ皮層ノ增厚シタルモノヨリ成リ,外見上果孔ナシ.

從來知ラレタルモノハ三種ニシテ,極メテ小サク叢生セル小植物ヲナシ,「ブラジル」及米國ノ北西部沿岸ニ生ズ. 本邦所產ノモノハ太平洋ニ產スル唯一ノ種ナリ. 屬ノ名ハ endos (內部) トclados (枝) トヨリ成ル; 即チ體ノ內部ノ構造ニ依レルモノナラン.

Endocladia complanata Harv.

いそだんつう 岡村稱.

第XXVII圖版, 12-20圖; 第XXVIII圖版, 13-17圖.

性質: 體ハ矮小ニシテ,簇生シ,廣ク蔓延シ,絲狀ニシテ圓柱狀又ハ扁壓,極メテ不規則ニ叉狀樣羽狀ニ分岐シ,往々反曲セル枝ヲ有ス. 枝ハ銳ク尖リ,刺狀ヲナシ,往々上部ノ方ニ楔形ニ擴ガリ,其頂端細齒狀ヲナス,而シテ互ニ接觸シタル箇所ヨリ根ノ如キ突起ヲ出シテ癒着シ以テ錯綜ス. 四分胞子囊ハ稍太リタル小枝ニ群集ス.

產地: 高潮線ノ岩石上ニ密ニ簇生ス. 九州ヨリ金華山ニ至ル間ノ太平洋沿岸ニ普通ナリ. 四分胞子:—初夏.

記載. 體ハ矮小ニシテ簇生シ,廣ク蔓延セル班ヲナシ,直立シ或ハ後傾臥シテ根ヲ以テ倂匐セル部分ヨリ斜上シ,圓柱狀又ハ稍扁圓,往々上方ニ扁壓ス. 分枝法ハ極メテ不規則ニシテ羽狀樣又狀ヲナス;或枝ハ多少長クシテ羽狀ヲナセドモ,通常概テ短クシテ單條若クハ分枝セル短カキ若クハ長キ刺狀ノ枝ヲ存ス;枝ハ往々强ク反曲ス. 枝及小枝ハ又往々上部ニ於テ少シク開張シテ楔形ヲナシ,稍叉狀ノ如ク屢々分岐シ,頂端ニ細齒ヲ有ス(第16圖). 各部ノ枝ハ尖銳ニシテ別段細カラザル基部ヲ以テ立チ,其互ニ相接觸スル箇所ヨリ根ノ如キ付着器ヲ形成シテ互ニ癒着シ,並ニ他物ニ付着ス;斯クテ體ハ傾臥スルニ至ル. 體ノ成長端ハ交互ニ斜面ヲ以テ關節セル頂細胞ヲ存ス,而シテ體ハ長キ中軸細胞ヨリ各方面ニ互生セル複叉狀ノ皮層絲ヲ以テ構成セラル;根樣細胞ハ殆ド之ヲ欠ク.

四分胞子嚢ハ少シク太リタル小枝ニ「チマセシア」狀ノ群ヲナシテ生ジ又他ノ部ニモ散在ス. 嚢果ハ詳ナラズ. 色ハ暗紅褐色ニシテ,乾燥スルトキハ殆ド黑色ニ變ズ. 質ハ柔軟ナレドモ,新鮮ノ時之ニ觸ルヽトキハ稍硬キ感アリ,後乾燥スルトキハ稍硬變ス.

備考: 本種ヲ定ムルニ當リ,之ヲ Harvey 氏ガ命ジタル新種 Endocladia complanata ニ當ツルニ就テハ,只 America ヨリ來レル Endocladia muricata ノ體ノ構造ヲ比較研究シタルノミニシテ,別段之ガ原標品若クハ其寫眞等ヲ見タルニモアラズ,又之ト比較ノ勞ヲ海外ノ學者ニ依賴シタルニモアラズ;然レドモ予ノ此鑑定ハ略ボ誤ナキモノト信ジテ,予ハ本種ノ性質ヲ上記セル如ク定メタリ,蓋シ曩ニ Harvey 氏ガ與ヘタル記載ハ簡ニ過ギ以テ之ヲ識別スルニ足ラザレバナリ.

昔(1866) Schottmueller 氏ガ我横濱ノ某商家ノ店頭ニ寒天ノ如ク溶解サレテ四角ナル形ヲナセル食用藻アリタリトテ之ヲ買

取リテ歸國ノ後調査シタルモノヲ Gelidium? rigens トシテ我「フロラ」ノ中ニ置ケリ;此種 De Toni Syll. Alg. IV. p. 177 = Enocladia? rigens (Mart.) Grun. ト改メラレテ今此處ニ記セル種ト同一ニハ非ルカトノ疑ヲ以テ載セラレタレドモ,本種ハ我邦ニテ食用トセザルヲ以テ多分夫トハ別物ナラント思惟ス;尙ホ考フベシ.

第XXVII圖版, 12-20圖. **12**: いそだんつうノ自然ノ狀態, $\frac{1}{1}$.—**13**: 稍規則正シク分枝シ且能ク成長シタル體(三河産),自然大ヨリ少シク大ナリ.—**14**: 同上ノ枝ノ一部, $\frac{5}{1}$.—**15-16**: 枝ノ極メテ不規則ナル矮小ノ體ノ一部(伊豆産); *a*, 枝ノ癒着シタル所; $\frac{10}{1}$.—**17**: 常態ノ矮小ナル體ノ一部(天草島産), $\frac{12}{1}$.—**18**: 枝ヨリ根ノ如キ突起(左右各一個)ヲ生ジタルモノ, $\frac{54}{1}$.—**19**: 枝ノ成長端, $\frac{350}{1}$.—**20**: 體ノ横斷面, $\frac{80}{1}$.

第XXVIII圖版, 13-17圖. **13-14**: 體ノ縱斷面, $\frac{220}{1}$.—**15**: 枝ノ互ニ癒着スル狀, 枝ノ一ハ胞子ヲ熟ス(三河産); *a*, 癒着部, $\frac{12}{1}$.—**16**: 四分胞子嚢ヲ有スル枝(天草島産); *r*, 付着器, $\frac{12}{1}$.—**17**: 四分胞子, $\frac{350}{1}$.

Asparagopsis Sanfordiana Harv.

Nom. Jap.: *Kagi-kenori.*

PL. XXVIII, Fig. 1-12.

Asparagopsis Sanfordiana Harv. Phyc. Austr. tab. VI; De Toni, Syll. Alg. IV, p. 771; 岡村, 日本藻類名彙 p. 53.

Hab. On rocks in deep waters (4 fath. at Hirado Str.): Ryukyu (col. Inui, Kuroiwa), Ogasawara-dzima (col. Matsumoto), Str. Hirado, Gō-no-ura (Prov. Iki, col. Toida).

Antheridia and cystocarps:—late spring to summar.

In Engler und Prantl's Pflanzenfam. Th. I, Abth. 2, p. 420, it is mentioned under generic character of the present genus, that antheridia are also formed in cystocarpic frond. But in our materials, fronds bearing antheridia are different from those bearing cystocarps.

Pl. XXVIII, Fig. 1-12: Fig. **1**: portion of fronds of *Asparagopsis Sanfordiana* in nat. state and size.—Fig. **2**: portion of the cross-section of stem, $\frac{42}{1}$.—Fig. **3**: longitudinal section of stem, $\frac{42}{1}$.—Fig. **4**: one of ramuli densely loaded with decussate and opposite, simple or compound ramelli, $\frac{54}{1}$.—Fig. **5**: surface-view of a young ramellus, $\frac{80}{1}$.—Fig. **6**: cross-section of a very young ramellus, $\frac{340}{1}$.—Fig. **7**: cross-section of a little advanced ramellus, $\frac{220}{1}$.—Fig. **8**: ramulus bearing antheridia, $\frac{22}{1}$.—Fig. **9**: antheridium, $\frac{91}{1}$.—Fig. **10**: young cystocarp, $\frac{54}{1}$.—**11**: fully formed cystocarps, $\frac{22}{1}$.—Fig. **12**: vertical section of a cystocarp, $\frac{54}{1}$.

Asparagopsis Montagne 1840.

かぎけのり屬.

BONNEMAISONIACEAE. かぎのり科.

體ハ圓柱狀又ハ偏ニ扁ク,各方面ニ多ク枝ヲ分チ,枝又甚密ニ分枝ス,而シテ其密ニ分枝セルモノハ恰モ小サキ筆頭狀ヲナス;此筆頭狀ノ枝ノ小枝ハ多クハ對ヲナシ,各對不規則ニ相交互ス,而シテ各對ノ二個ノ小枝ハ互ニ斜ニ對生ス. 頂細胞ハ橫ニ關節シ,其關節面ハ斜面ニシテ各側ニ(或ハ斜ニ二側面ニ)交互ス. 體ハ三層ヨリ成ル;即チ,中心ニ一條ノ中軸ヲ有シ,其周圍ニ圓形—多角形ノ細胞ヨリ成レル厚キ皮部組織アリテ,其最外層ハ皮層ヲナス,而シテ中軸細胞ノ關節點ヨリ分岐セル絲狀細胞ヲ以テ皮部組織ヲ連絡ス. 小枝ノ稍太キモノ及ビ枝ハ之ト同樣ノ構造ヲ有ス.——四分胞子囊ハ知ラレズ. 精子器ハ囊果アル體ニモ有ス. 胎原列ハ稍太キ短キ特別ノ小枝ノ頂端ニ生ジ,其小枝ハ束狀ヲナセル枝ノ下部ニアリ. 囊果ハ上ニ云ヘル如キ短キ小枝ノ頂端ニ一個宛生ジ稍斜ニ付着シ,球狀—卵形ニシテ甚シク膨大シ,束狀ヲナセル枝ノ下部ニ在リテ長キ柄ヲ以テ立ツ.

三種アリテ諸所ノ溫暖ノ海ニ產ス. 模範種タル A. Delilei Montagne (=Dasya Delilei Mont.) ハ「カナリー」島及西印度ニ產ス;其他濠洲ニ產スル種モアリ. 屬ノ名ハ Asparagus (くさすぎかづら) ト opsis (類似) トヨリ成ル;即チくさすぎかづらニ似タル形態ヲ存スルニ依ル.

Asparagopsis Sanfordiana Harv.

かぎけのり 岡村稱.

第XXVIII圖版, 1-12圖.

體ハ根莖ヨリ直立シ,根莖ハ不規則ニ分岐錯綜セル匍匐莖ニシテ鳥ノ羽軸程太ク,所々ニ尖細ナル小枝ヲ存シ,上方ニ數條ノ莖ヲ生ズ,莖ノ高サ 10-20 cm. アリ. 莖即チ體ハ根莖ト同樣ニ太ケレドモ漸次上方ニ細ク,單條又ハ偏ニ分岐ス. 體ノ下部ハ多少枝ナケレドモ,上部ハ羽狀ニ多クノ枝ヲ生ズ. 枝ハ体ノ各方面ヨリ互生シ,3-5 cm. 長ク,密ニ束狀ヲナセル小枝ヲ以テ蔽ハル. 束狀ヲナセル小枝ハ枝ノ各方面ヨリ密生セルモノニシテ短ク,密ニ毛狀ノ最末小枝ヲ生ズル狀宛モ畫筆ノ如ク,其頂端鈍圓ナリ. 最末小枝ハ絲狀ニシテ上方ニ細ク,皆內方ニ屈曲シ或ハ卷縮ス;而シテ表面ハ多角形ノ小細胞ヨリ成ル. 莖及枝ノ太キ部分ハ之ヲ表面ヨリ見ルニ關節スルコトアラザレドモ,內部ニ細長キ絲狀ノ中軸ヲ有シ,其周圍ニ厚

キ皮部組織アリ；皮部組織ハ數層ノ圓形—多角形ノ大ナル無色ノ細胞ヨリ成リ，其最外層ノモノ外皮ヲナス；而シテ中軸ト皮部組織トノ間ニハ廣キ空隙アリテ，中軸ノ關節部ヨリ分岐セル絲狀細胞ヲ發シ，以テ中軸ト皮部組織トヲ結合ス；此絲狀細胞皮層ノ内側ニ沿ヒテ空隙ヲ縱走ス．　小枝及ビ最末小枝モ其太キモノハ莖ノ構造ト大差ナケレドモ，幼者ハ 6-7 圖ニ見ル如ク，始メハ中軸ナク後之ヲ生ズ．

精子器ハ最末小枝ヨリ變成シ棍棒狀ナリ．　囊果ハ畧粟粒大ニシテ特ニ之ヲ生ズル爲ニ變形シタル短キ稍太キ最末小枝ノ頂端ニ生ジ，倒卵形ニシテ束狀ノ小枝ノ下部ニ生ズ．　仁ハ大ナル單塊ニシテ，囊果ノ内底ニ立テル稍大ナル仁柄細胞ヨリ數多ノ分岐セル胞子絲ヲ發生シ，其頂端ノ細胞棍棒狀ノ胞子ヲナス．　四分胞子ハ未ダ詳ナラズ．　色ハ濃キ紅褐色又ハ稍紫紅色ニシテ，乾燥スルトキモ能ク保存セラル．　質ハ莖及ビ枝ハ多肉ニシテ乾燥スルトキハ軟骨樣トナレドモ，小枝及最末小枝ハ甚ダ軟弱ニシテ能ク紙ニ付着ス．

かぎけのりノ和名ハかぎのりニ似テ毛狀ノ小枝多キニ依リ予ノ命ジタル處ナリ，別ニ鉤狀ノ枝アルニアラズ．

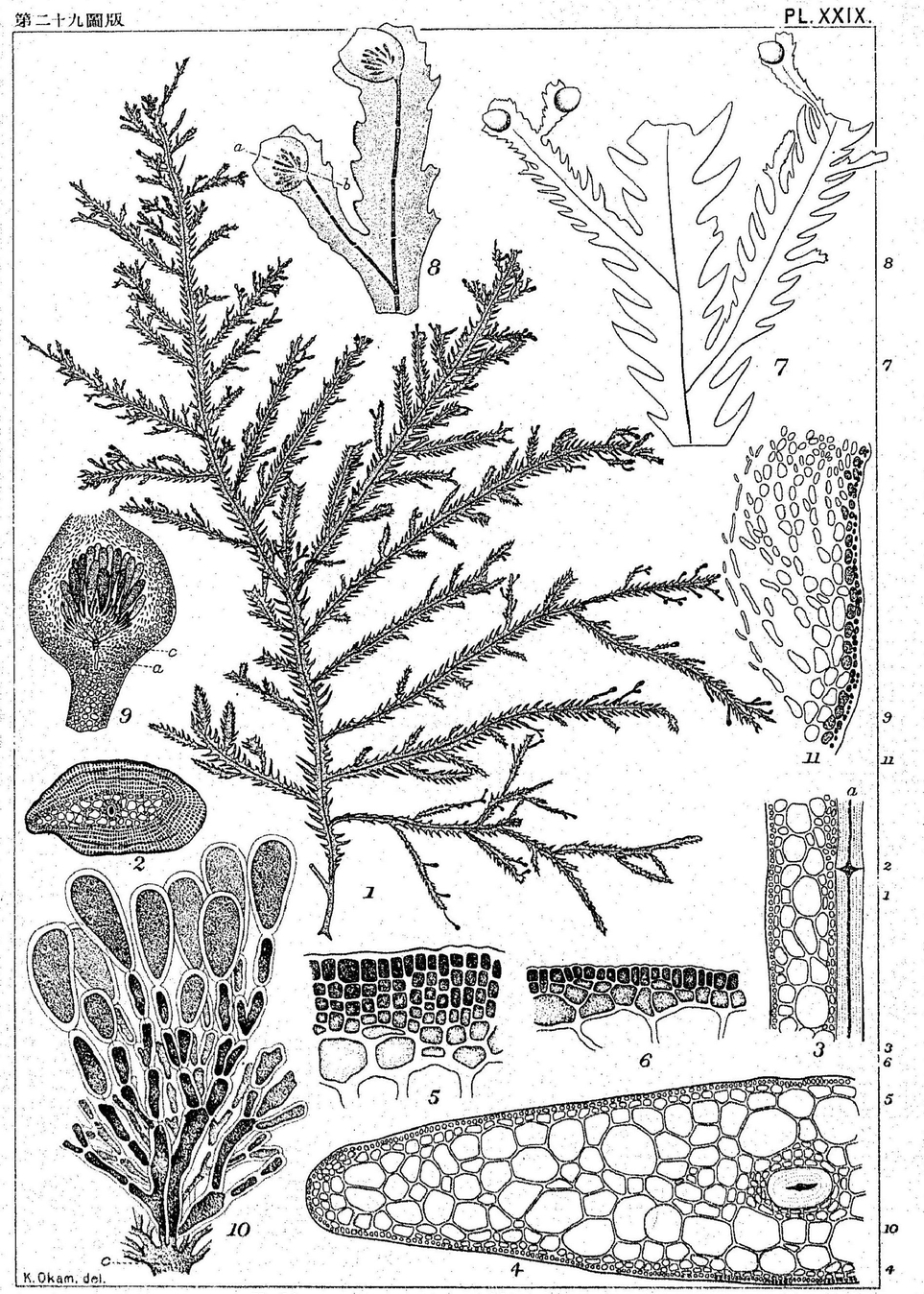
産地：低潮線以上ノ岩石ニ生ズ（平戸海峽，四尋）．　琉球（乾，黑岩），小笠原島（松本），平戸海峽，壹岐郷ノ浦（戸井田）．

分布：ニウホルランドノ西部．　精子器及囊果：晩春—夏季．

Engler u. Prantl's Die Natürl. Pflanzenfam. Th. I, Abth. 2, p. 420 ニ本屬ノ性質ノ條下ニ精子器ハ又囊果ノ有スル體ニモ生ズトアレドモ，本種ニアリテハ二者明ニ別々ノ體上ニアリ．

第 XXVIII 圖版，1-12 圖．　**1**：かぎけのりノ自然ノ狀態，$\frac{1}{3}$.—**2**：莖ノ横斷面ノ半分，$\frac{4}{1}$.—**3**：莖ノ縱斷面，$\frac{4}{1}$.—**4**：束狀ヲナセル小

第二十九圖版 PL. XXIX.



Delisea japonica Okam. nov. sp.

枝ノ全體ニテ最末小枝ノ交互ニ對生スル狀ヲ示ス，$\frac{5}{1}$.—**5**：最末小枝ノ表面，$\frac{80}{1}$.—**6-7**：最末小枝ノ橫斷面；6圖ハ極メテ幼ク7圖ハ稍長ジタルモノ；6：$\frac{340}{1}$，7：$\frac{250}{1}$.—**8**：精子器ヲ有スル小枝，$\frac{22}{1}$.—**9**：精子器，$\frac{91}{1}$.—**10**：幼キ囊果ヲ有スル小枝，$\frac{5}{1}$.—**11**：成熟セル囊果，$\frac{22}{1}$.—**12**：囊果ノ縱斷面，$\frac{45}{1}$.

Delisea japonica Okam. nov. sp.

Nom. Jap.: *Tama-itadaki.*

BONNEMAISONIACEAE. かぎのり科.

Delisea pulchra (non Mont.) Okam. Alg. Exsic. (岡村，日本海藻標品) Fasc. I, no. 19; *D. pulchra var.?* 岡村，日本藻類名彙 p. 52.

Diagn. Fronds coespitose, linear, compressed, flat, thinly mid-ribed, decompound pinnate, pectinated with delteo-subulate alternate teeth, which are patent and a little longer than the breadth of the rachis. Cystocarps sessile, each being situated on the midrib below the extremity of a ramulus, pointing obliquely to the midrib with the longitudinal axis of cystocarp making a widely obtuse angle with the lower portion of the midrib and almost right angle with the apical portion of the ramulus.

Hab. On rocks near low water-mark. Common along the Pacific from Kyushyu to Prov. Kadsusa. Cystocarps :—summer.

Root a broad, circular disc. Fronds densely tufted, 20-25 cm. high. The lower part of frond, in older specimens, becomes for a short distance gradually thickened into a stem, which is tereto-compressed with or without remains of marginal teeth. Upwards, the

stem gradually passes into the flat, narrow-linear, costate, simple or forked, principal rachis of a 4-5 times repeatedly decompound pinnate frond. Branches and all their divisions are midribed, alternate and distichous, but the ramification is very unequal, long and short ramuli often alternating without order. The branches are about 2 mm. in breadth, and very gradually attenuate toward their bases. They are closely serrated with alternate, delteo-subulate, erecto-patent teeth which are somewhat longer than the breadth of the rachis. The teeth are much longer and more incurved on the upper portion of branches, more especially so in younger branchlets, than those on the lower portion. Cystocarps are seated on the midrib, just below the extremities of ramuli. The terminal portion of the ramulus bearing a cystocarp tends to the side opposite to its longitudinal axis. The longitudinal axis of cystocarp does not coincide with the lower portion of the midrib, but makes an angle of about 135° with it, while the upper part of the midrib turning to the other side makes an approximately right angle with the longitudinal axis of cystocarp. The carpostome does not point upward, but obliquely to the midrib and slightly above the plane of the ramulus. The inner wall of pericarp surrounding the neucleus is made up of somewhat anastomosing, filamentous rows of cells, which converge toward the carpostome. Neucleus is simple and spore-filaments are fasciculated from a pretty large central cell ("Stielzelle"). The cortical layer over the midrib is thicker than that on the membranous portion of frond.

Plant so closely allied to *Delisea pulchra Mont.* that I formerly referred it to that species in my "Alg. Jap. Exsic." no. 19. It differs, however, from that species by its thinner substance and the slenderer midrib, in addition to the more important character of the position of cystocarp. In *D. pulchra*, as it is seen from the descriptions and illustrations given in Harvey's Phyc. Austr. pl. XVI, the cystocarp

has its terminal pore pointing upward and its longitudinal axis coinciding with the midrib, which are never the case in our plants. By the latter characters, I think it proper to separate the present plant from *D. pulchra*, with which the plant in question stands in so close resemblance that one may take it as a variety of the species mentioned.

PL. XXIX.—Fig. **1**: frond of *Delisea japonica* Okam., bearing cystocarps in nat. size.—Fig. **2**: cross-section of stem, $\frac{22}{1}$.—Fig. **3**: portion of longitudinal section of frond; *a*, midrib; $\frac{85}{1}$.—Fig. **4**: half of the cross-section of frond, $\frac{85}{1}$.—Fig. **5**: cross section of lower portion of frond, showing the cortical layer over the midrib, $\frac{390}{1}$.—Fig. **6**: cross-section of the upper portion of frond, showing the cortical layer over the midrib, $\frac{390}{1}$.—Fig. **7**: portion of frond bearing cystocarps, $\frac{5}{1}$;—Fig. **8**: the same, magd.—Fig. **9**: vertical section of cystocarp, cut along the plane of *a b* in fig. 8; the right side of the figure showing the under side of the cystocarp; *a*, the axis; *c*, "Stielzelle"; $\frac{52}{1}$.—Fig. **10**: portion of spore-filaments arising from the "Stielzelle," *c*, $\frac{390}{1}$.

Delisea Lamouroux 1819.

たまいたゐき屬.

BONNEMAISONIACEAE. かぎのり科.

体ハ多少扁平ニシテ羽状ニ分枝シ,兩緣ニ沿ヒテ櫛齒狀ヲナセル齒片ヲ互生シ,時トシテハ下部ニ中肋ヲ存ス. 体ノ構造ハ一條ノ中軸ヲ有シ,中軸ハ大ナル圓柱狀細胞ヨリ成リ,其周圍ハ特ニ小ナル數條ノ細胞ヲ以テ圍マル;而シテ更ニ數層ノ柔軟細胞ヲ以テ圍繞セラレ,其最外層ノモノ薄キ皮層ヲナ

ス. 頂細胞ハ兩側ニ交互ニ斜ニ關節ス.——四分胞子嚢ハ枝ノ頂端ニ近ク瘤狀ノ「テマセシア」ヲナシテ枝ノ表面ニ生ジ,多少正シク環狀ニ分裂ス. 嚢果ハ上部ノ小枝ニ生ジ,單獨又ハ二三個一所ニ集リ,多少枝端ニ近ク卵形ヲナシ,枝ノ一方ノ面又ハ兩面ニ膨大シ,概テ多少斜ニ着ク. 仁ハ單塊ニシテ,中軸若クハ中軸ノ枝ニ座シ,成胞絲ハ稍大ナル仁柄細胞ヲ以テ果ノ內底ニ付着シ,複總狀ニ分岐セル胞子絲ヲ發出シ,其頂端ノ細胞變ジテ棍棒狀又ハ倒卵形ノ果胞子ヲナス;胞子絲ハ密ニ束集シ鈍圓ノ塊狀ヲナス;而シテ胎座ハ小ニシテ仁柄細胞ノ下ニ位シ,此部ヨリ果皮ノ頂端ニ開口セル果孔ノ方ニ絲狀組織ヲ存ス;此組織ハ多少網狀ニ結合シテ果皮ノ內層ヲ構成シ以テ仁ノ周圍ヲ被包ス. 果皮ノ外層ハ体ノ皮層ヨリ成リ,大ナル果孔ヲ開ク.

多クハ「オースタラリア」ノ沿岸ニ產スルモノニシテ目今凡ソ六種アリ. 本邦ニハ只下ノ一種アルノミ. 屬ノ名ハ佛國ノ博物學者 Delise 氏ノ名譽ノ爲ニ設ケタルナリ.

Delisa japonica Okam. 新種.

たまいたゞき 岡村稱.

第XXIX圖版.

性質: 体ハ叢生シ,線狀ニシテ扁平,細キ中肋ヲ存シ,複羽狀ニ分枝シ,楕齒狀ニ列スル細キ三角形ノ尖銳ナル齒狀片ヲ互生ス;齒狀片ハ廣開シ枝ノ幅ヨリハ少シク長シ.——四分胞子嚢ハ詳ナラズ. 嚢果ハ無柄ニシテ小枝ノ頂端下ノ中肋ノ上ニ座シ,中肋ニ對シテ斜ニ一方ノ側ニ向キ,其縱ノ軸ハ嚢果ノ下部ノ中肋ト廣キ鈍角ヲナシ,小枝ノ頂部ト略ボ直角ヲナス.

產地: 低潮線附近ノ岩石ニ生ズ. 九州ヨリ上總ニ至ル太平洋沿岸ニ普通ナリ. 嚢果:—夏季.

記載: 根ハ廣キ圓盤狀ナリ. 体ハ密ニ叢生シ,高サ 20-25 cm. アリ. 体ノ下部ハ始メハ扁平ナレドモ,老成スルニ至レバ小距離ノ間漸ク太クナリテ莖トナリ,莖ハ略ボ圓柱狀ニシテ兩緣ニ齒狀片ノ殘片ヲ存スルモノアリ. 莖ハ漸次上部ニ扁クシテ細長キ線狀ノ主枝トナリ,主枝ハ單條又ハ稍分叉シ中肋ヲ有シ,4-5 回複羽狀ヲナス. 枝ハ總テ中肋ヲ有シ,兩緣ヨリ互生ス,然レドモ枝態ハ甚不同ニシテ長短往々錯雜ス. 枝ハ幅約 2 mm. ニシテ基部ノ方ニ僅ニ細シ. 枝ノ兩緣ハ齒狀片ヲ存シ,齒狀片ハ楕齒狀ニ並ビ,互生ニシテ細キ三角形ヲナシ,尖短ニシテ廣開ス;其長サハ其部ノ枝ノ幅ヨリモ稍長シ. 枝ノ上部ニアル齒狀片ハ其下部ニアルモノヨリ長ク且ツ其ヨリモ多ク彎曲ス,殊ニ幼キ枝上ノモノニ於テ然リトス. 中肋部ノ皮層ハ膜狀部ノモノヨリ稍厚シ.

嚢果ハ中肋ノ上ニ座シ,枝端ノ直下ニアリ,而シテ嚢果ヲ有スル小枝ノ頂端ハ嚢果ノ縱ノ軸ト反對ノ方向ニ屈曲ス. 嚢果ノ縱ノ軸ハ其ヨリ下部ニ在ル中肋ノ方向トハ一致セズシテ,之ト凡ソ百三十五度ノ角度ヲナシ,一方ヘ屈曲シタル中肋ノ上部ハ嚢果ノ縱ノ軸ト凡ソ直角ニ交ル. 果口ハ上方ニ向カズシテ中肋ニ對シテ斜ニ向キ,小枝ノ面ヨリ少シク高クナリテ開口ス. 果皮ノ內層ハ仁ヲ包ミ,絲狀ノ細胞稍網狀ヲナシテ果口ノ方ニ集リ走ルモノヨリナル. 仁ハ單塊ニシテ,胞子絲ハ可ナリ大ナル仁柄細胞ヨリ束狀ニ出ヅ.

本種ハ Delisea pulchra Mont. ニ酷似セルヲ以テ予ハ予ノ日本海藻標品第一帙19號ニ其名ニテ發行シタリ;然レドモ本種ハ夫トハ異リテ,体質薄ク中肋細ク,殊ニ嚢果ノ位置ニ於テ重要ナル差アルヲ見ル. D. pulchra ニテハ Harvey 氏ガ Phyc. Austr.

PL. XVI ニ圖說シタル如ク，蘷果ハ其果口ヲ上方ニ向ケテ開キ，其縱ノ軸ハ中肋ト一致ス；然レドモ此等ノ事ハ本植物ニハ到底見ル能ハザル處ナリ．　此蘷果ノ位置ノ異ナル性質ニ依リテ，予ハ本種ヲ D. pulchra ヨリ分ツヲ正當ナリト思惟ス．　然レドモ，本種ハ其種ト極メテ親密ノ類緣ヲ有スル事ハ明ニシテ或ハ其變種ナルカノ疑ナキニ非ズ．　和名ハ枝ノ頂端ニ蘷果ヲ戴クニ因レリ．

第XXIX圖版．　1：たまいたいきノ蘷果ヲ有スルモノ，自然大.—2：莖ノ橫斷面，$\frac{22}{1}$.—3：体ノ縱斷面ノ一部；*a*，中肋；$\frac{85}{1}$.—4：体ノ橫斷面ノ半分，$\frac{85}{1}$.—5：体ノ下部ノ橫斷面ノ一部ニシテ中肋上ノ皮層ヲ示ス，$\frac{300}{1}$.—6：体ノ上部ノ橫斷面ノ一部ニシテ同ジク中肋上ノ皮層ヲ示ス，$\frac{300}{1}$.—7：蘷果ヲ有スル枝，$\frac{5}{1}$.—8：同上，廓大.—9：第8圖ニ示シタル如ク *ab* ノ面ニ沿フテ斷リタル蘷果ノ縱斷面；圖ノ右側ハ蘷果ノ下側面ナリ；*a*，中軸；*c*，仁柄細胞，$\frac{52}{1}$.—10：仁柄細胞，*c*，ヨリ束狀ニ胞子絲ノ出ル狀，$\frac{300}{1}$.

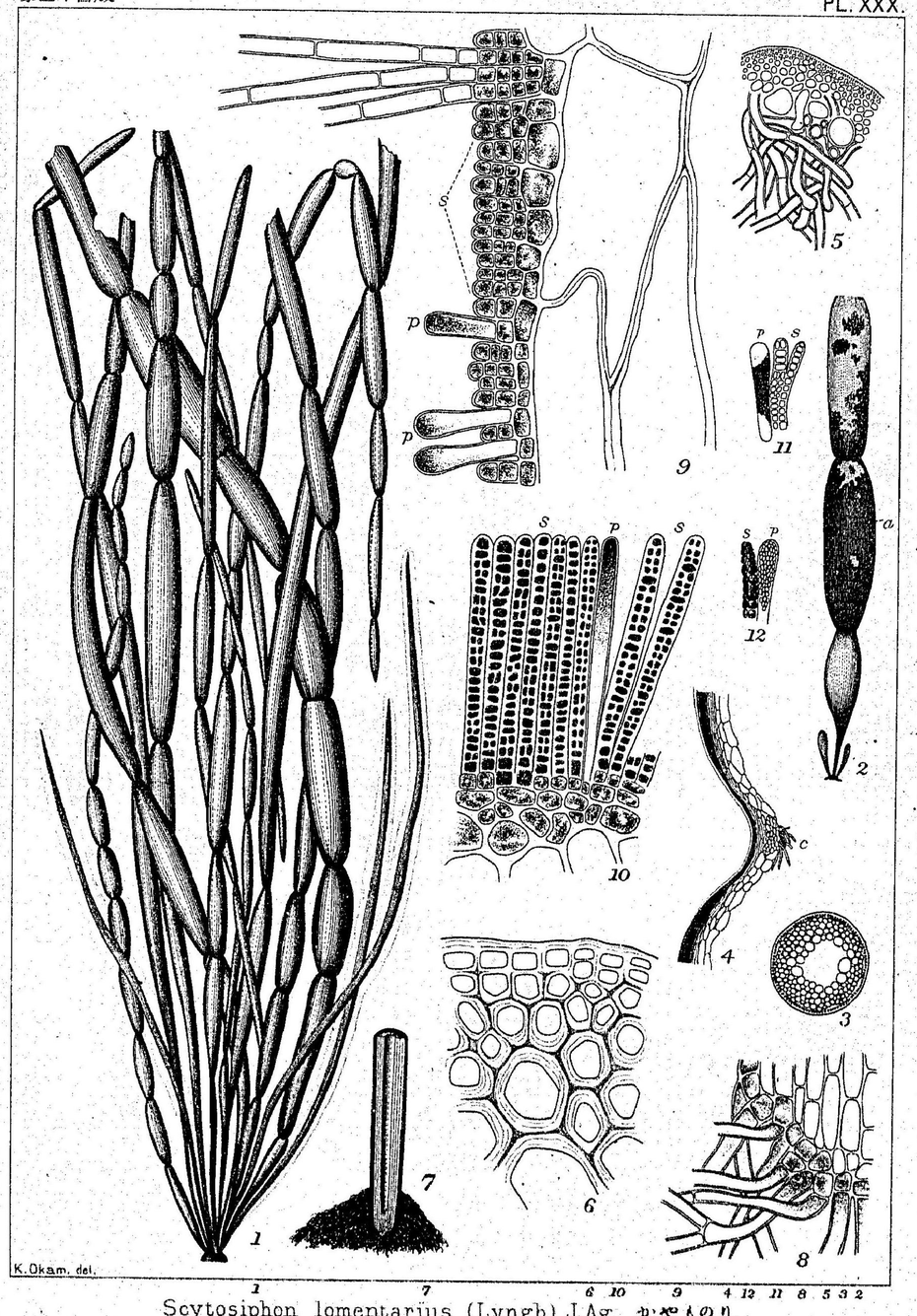
Scytosiphon lomentarius (Lyngb.) J. Ag.

Nom. Jap.: *Kayamo-nori.*

PL. XXX.

Scytosiphon lomentarius (Lyngb.) J. Ag. Sp. Alg. I, p. 126; Hauck Meeresalg. p. 396, f. 169; Ardiss. Phyc. Medit. II, p. 117; De Toni Syll. Alg. III. P. 485; Okam. Jap. Exsic. (岡村，日本海藻標品) Fasc. II, no. 85; 岡村，日本藻類名彙 p. 118.—*Chorda lomentarius* Lyngb. Hydrophyt. Dan. p. 74, t. 18; Harv. Phyc. Brit. tab. 285.—*Chorda Filum var. lomentaria* Kuetz. Sp. Alg. p. 548; Id. Tab. Phyc. VIII, t. 14 c,c'.—*Chorda Filum var. fistulosa* Kuetz. Sp. Alg. p. 548; Id. Tab. Phyc. VIII, t. 14 d-e, t. 15 d-e.

第三十圖版 PL. XXX.



Scytosiphon lomentarius (Lyngb.) J.Ag. かやものり.

Hab.: On rocks near high-tide in calm places, also in tide-pools. Common along both coasts of the country from Ryūkyū to Shimushu Island. Sori:—late autumn to winter.

PL. XXX. Fig. **1**: fronds of *Scytosiphon lomentarius* in nat. state and size; three of them very young.—Fig. **2**: portion of frond with fully grown sori, *a*, $\frac{1}{1}$.—Fig. **3**: cross-section of frond, $\frac{54}{1}$.—Fig. **4**: portion of longitudinal section of frond cut through the joint, where filamentous cells are emitted into the cavity of siphon, $\frac{54}{1}$.—Fig. **5**: cross-section of joint-like portion of frond showing filamentous cells; $\frac{220}{1}$.—Fig. **6**: cross-section of lower portion of frond with thickened walls of cortical cells, $\frac{600}{1}$.—Fig. **7**: longitudinal section of basal portion of frond showing root-fibres, $\frac{1}{1}$.—Fig. **8**: root-fibres emitted from the epidermal cells of frond, $\frac{340}{1}$.—Fig. **9**: longitudinal section of frond through a young sorus; *s*, young gametangia; *p*, *p*, paraphyses; $\frac{600}{1}$.—Fig. **10**: Fully grown gametangia, *s*, *s*, and paraphyses, *p*; $\frac{600}{1}$.—Fig. **11-12**: gametangia, *s*, and paraphyses, *p*; paraphyses of fig. 12 has granular contents, $\frac{350}{1}$.

Scytosiphon (Lyngb.) J. Ag.

かやものり屬.

SCYTOSIPHONEAE (ENCOELIACEAE).

かやものり亞科 (ふくろのり科).

体ハ圓柱狀單條ニシテ中空, 二層ヨリ成ル; 内層ハ大ナル圓柱狀細胞ニシテ皮層細胞ハ圓形—多角形ナリ. 体ノ成長ハ体ノ下部ノ細胞ノ介生的分裂ニヨリテ成ル. 複子嚢ハ稍圓柱狀ニシテ群生シ, 或ハ濶キ面ヲ蔽ヒテ生ジ, 或ハ斑點狀ヲナシ, 皮層細胞ヨリ生ズ, 圓柱狀ニシテ一縦列ノ室ヨリナル; 「パラフヰシス」ハ之ヲ存シ或ハ欠ク.

二 (或ハ三) 種アリテ, 此處ニ記スモノハ地球上殆ド産セザ

ハ所ナキ程廣ク散布スル種ナリ. 屬ノ名ハ Scytos (革) ト Siphon (管) トヨリ成ル; 即チ體ノ形質ニ取レルナリ.

Scytosiphon lomentarius (Lyngb.) J. Ag.

かやものり.

第XXX圖版.

體ハ圓柱狀又ハ腸狀ニシテ, 概ネ少距離ニ縊レテ關節ノ如キ狀ヲナシ, 節ト節トノ間ハ膨ル, 長サ 15-30 cm. (時ニ 60 cm. ニ達ス), 徑 5-10 mm. アリ. 幼者ハ體ノ全面ニ無色ノ毛茸ヲ被ムレドモ後脫落ス. 體ノ下部ハ細クシテ褐色毛狀ノ根毛ヲ以テ立ツ. 子囊ハ「パラフヰシス」ト混在ス. 質革質ニシテ乾燥スル時ハ紙ニ付着セズ. 色綠褐色ヨリ黃褐乃至暗褐色ヲナス

產地: 稍靜ナル處ノ高潮線付近ノ岩石ニ簇生シ又潮溜ニアリ; 占守ヨリ琉球ニ至ル迄兩沿岸トモ隨所ニ產ス. 子囊:—晩秋—冬季.

分布: 寒帶ヨリ熱帶迄アリ.

第XXX圖版. 1: かやものり ノ自然ノ狀態; 三個ノ體ハ最モ幼シ, $\frac{1}{1}$—2: 子囊群, a, ヲ有スル體ノ一部, $\frac{1}{1}$.—3: 體ノ橫斷面, $\frac{54}{1}$.—4: 縊レタル部分ヲ通シテ切リタル體ノ縱斷面ニシテ其部ヨリハ體ノ內部ニ絲狀細胞ヲ發出ス, $\frac{54}{1}$.—5: 縊レタル部分ノ橫斷面ニシテ絲狀細胞ヲ出ス狀, $\frac{220}{1}$.—6: 體ノ下部ノ橫斷面ニシテ皮層細胞ノ膜ノ厚キヲ示ス, $\frac{600}{1}$.—7: 體ノ下部ヲ縱斷シテ毛狀根ヲ示ス, $\frac{1}{1}$—8: 體ノ表皮細胞ヨリ毛狀根ヲ生ズル狀, $\frac{340}{1}$.—9: 幼キ子囊ヲ通シテ切リタル縱斷面; s, 幼キ「ガメート」囊; p, p, 「パラフヰシス」; $\frac{600}{1}$.—10: 充分成熟セル「ガメート」囊, s, s, ト「パラフヰシス」, p, トヲ示ス, $\frac{600}{1}$.—11-12: 「ガメート」囊, s, ト「パラフヰシス」, p; 12 圖ノ「パラフヰシス」ハ粒狀ノ內容物ヲ藏ス, $\frac{350}{1}$.

(Pl. XXVI—XXX, February, 1908).

注意: 第V集第XXV圖版ハ P. 116 ト 117 トノ間ニ入ルベキナリ.

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品 第I-II帙 No. 1-100.

FASCICULUS I-II. No. 1-100.

Price (exclusive of postage) of every Fasciculus :—3omk. = 30 shill. = 37.5 fr. = $7,50.

Subscribers to be addressed to the auther: No. 4, Ni-chomé, Shin-Ogawa-machi, Ushigomé, Tokyo.

Foreign Agent: **Oswald Weigel,** Leipzig, Königsstr. 1, Deutschland.

各帙: 金拾弐圓五十錢 (外ニ郵送料).

岡村金太郎:—東京牛込新小川町二丁目四番地 (口座 10936).

動物標本社:—東京神田五軒丁.

NOTICE.

Price (inclusive of postage) of the ICONES which contains 5 plates in every number is 3 MK. for abroad.

Remittances from abroad to be made by Postal Money Order, payable to

K. Okamura, No. 4, Ni-chomé, Shin-Ogawamachi, Ushigomé, Tokyo.

Z. P. Maruya & Co., 14-16, Nihonbashi Tōri Sanchōme, Tokyo.

Foreign Agent: **Oswald Weigel,** Leipzig, Königsstrasse 1, Deutschland.

定價: 各集圖版五枚ニ就キ壹部金壹圓 (外ニ郵稅)

明治四十一年二月十六日印刷
明治四十一年二月廿日發行

不許複製

著作者兼發行者 岡村金太郎 東京牛込區新小川町二丁目四番地 振替貯金口座壹〇九參六
印刷者 中村彌助 東京市京橋區日吉町十番地
印刷所 近藤商店活版部 東京市京橋區日吉町十番地
發賣所 丸善株式會社 東京市日本橋區通三丁目 大坂市心齋橋筋博勞町西丁目 振替貯金口座(東京五番大坂七四番)

日本藻類圖譜

第一卷 第七集

岡村金太郎 理學博士 著

ICONES OF JAPANESE ALGÆ.

Vol. I. No. VII.

BY

K. Okamura *Rigakuhakushi.*

Contents of No. VII. (Pl. XXXI—XXXV.)

Apoglossum violaceum (Harv.) J. Ag.	ぬめはのり
Euzoniella flaccida (Harv.) Fkbg.	くしのは
Hypoglossum geminatum Okam. sp. nov.	べにはのり
Gigartina tenella Harv.	すぎのり
Gigartina pacifica Kjellm.	いばのり
Gigartina intermedia Sur.	かいのり
Grateloupia lancifolia (Harv.) Okam.	きようのひも
Halymenia acuminata (Holm.) J. Ag.	おほむかでのり

Published

by

THE AUTHOR.

June, 1908.

Tokyo.

朝津
41 6 19
内交

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品　第二帙

FASCICULUS II.

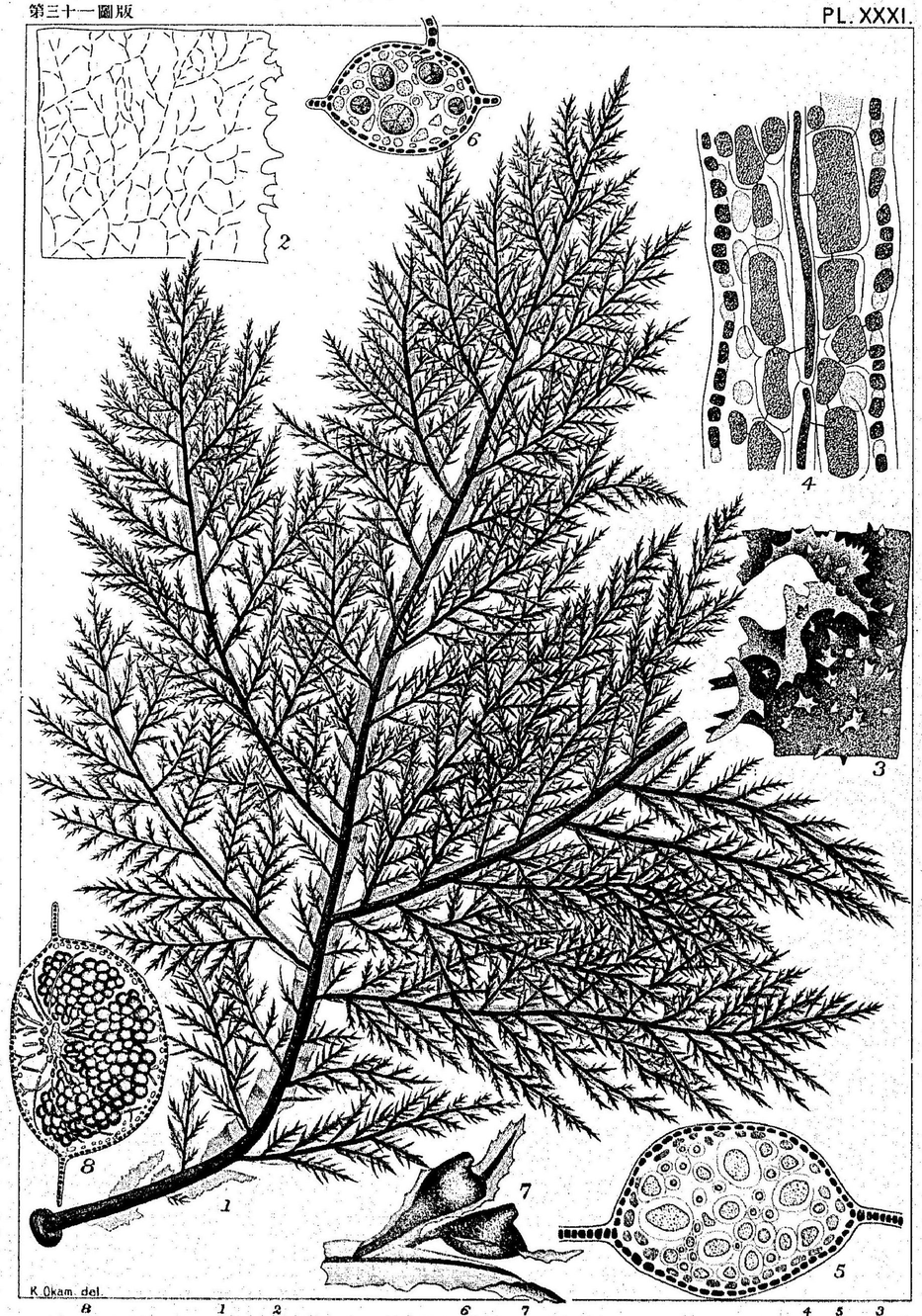
51. Porphyra suborbiculata Kjellm.
52. Batrachospermum moniliforme Roth.
53. Batrachospermum virgatum (Kuetz.) Sirod.
54. Batrachospermum Gallaei Sirod.
55. Yatabella hirsuta Okam.
56. Endocladia complanata Harv.
57. Gigartina Teedii (Roth) Lamour.
58. Gigartina intermedia Suring.
59. Eucheuma spinosum (L.) J. Ag.
60. Ceratodictyon spongiosum Zanard.
61. Gracilaria confervoides (L.) Grev.
62. Hypnea seticulosa J. Ag.
63. Hypnea Saidana Holmes.
64. Gastroclonium ovale (Huds.) Kuetz.
65. Erythrocolon Muelleri (Sond.) J. Ag.
66. Nitophyllum uncinatum (Turn.) J. Ag.
67. Caloglossa Leprieurii (Mont.) J. Ag. Var. continua Okam. Nov. Var.
68. Caloglossa ogasawaraensis Okam.
69. Acrocystis nana Zanard.
70. Polysiphonia fragilis Suring.
71. Pterosiphonia pennata (Roth) Fkbg.
72. Symphyocladia Marchantioides (Harv.) Fkbg.
73. Rhodomela Larix (Turn.) Ag.
74. Herposiphonia fissidentoides (Holmes) Okam.
75. Heterosiphonia pulchra (Okam.) Fkbg.
76. Ptilota pectinata (Gunn.) Kjellm. f. typica Kjellm.
77. Carpoblepharis Schmitziana (Rbd.) Okam.
78. Ceramium clavulatum Ag.
79. Microcladia corallinae (Mart.) Okam.
80. Campylaephora Hypnaeoides J. Ag.
81. Gloiopeltis cervicornis (Suring.) Schmitz.
82. Peyssonnelia caulifera Okam.
83. Corallina radiata Yendo.
84. Zonaria Diesingiana J. Ag.
85. Scytosiphon lomentarius (Lyngb.) J. Ag.
86. Endarachne Binghamiae J. Ag.
87. Cladosiphon decipiens (Suring.) Okam.
88. Cylindrocarpus rugosa Okam. Sp. Nov.
89. Leathesia difformis (L.) Aresh.
90. Mesogloea crassa Suring.
91. Chordaria abietina Rupr.
92. Ulva conglobata Kjellm.
93. Chaetomorpha crassa (Ag.) Kuetz.
94. Chaetomorpha spiralis Okam. Sp. Nov.
95. Caulerpa ambigua Okam.
96. Chlorodesmis comosa Bail. et Harv.
97. Codium adhaerens (Cabr.) Ag.
98. Rhipidiphyllon reticulatum (Ask.) Heydr.
99. Boodlea coacta (Dickie) Murr. et De Toni.
100. Brachytrichia Quoyi (Ag.) Born. et Flah.

NOTICE.

Price (exclusive of postage) **of** every Fasciculus:—30 mk. = 30 shill. = 37.5 fr. = $ 7.50.

Subscribers to be addressed to the author:

No. 4, Ni-chomé, Shin-Ogawamachi, Ushigome, Tokyo, Japan.



Apoglossum violaceum (Harv.) J. Ag. ぬめはのり Figs. 1-8.

第三十二圖版　　PL. XXXII.

Euzoniella flaccida (Harv.) Fkbg. くしのは. Figs. 1-6.
Hypoglossum geminatum Okam. sp. nov. べっはのり. Figs. 7-12.
Apoglossum violaceum (Harv.) J. Ag. むめはのり. Figs. 13-17.

Apoglossum violaceum (Harv.) J. Ag.

Nom. Jap.: *Numeha-nori.*

PL. XXXI, Fig. 1-8; PL. XXXII, Fig. 13-17.

Apoglossum violaceum J. Ag. Sp. III, 3 (1893) (nomen); De Toni Syll. Alg. IV, p. 700; 岡村, 日本藻類名彙, p. 50.—*Delesseria violacea* J. Ag. Epicr. p. 492; De Toni Phyc. Jap. nov. p. 29.—*Delesseria serrulata* Harv. in Perry Exp. to Jap., Bot., Append. p. 331; Kuetz. Tab. Phyc. XIX, t. 12, f. a-b.

Plant furnished with a simple primary percurrent frond standing from an expanded disc, midribed and broadly winged, the lower portion altered into a thick subcylindrical stem (2-3 mm. in diam.) for a shorter or longer extent by denudation of the wings. It attains usually a height of 30 cm. or more. Ramification 3-4 times alternately pinnate by repeated proliferations from both sides of the midrib on both surfaces, and some of them elongate into main branches. Branches are often excessively produced. Branches of every order linear-lanceolate tapering into a fine point from narrowed base and furnished with a thick prominent midrib which is thickly corticated. Membranes are very thin and delicate, traversed by reticulated veinlets with undulato-serrulated or irregularly denticulated margins, and those on lower portion of frond furnished with minute prickle-like branched processes on both surfaces. They are often broader than 10 mm. at the primary frond, gradually becoming narrower above.

Sori are linear, being produced along the thickened median portion of ultimate and penultimate proliferations which are transformed into leaflets like sporophylls; they are not produced by confluence of those formed along both sides of the midrib. Sporangia are transformed from a cell produced as a branch of an infra-cortical cell which

is derived from the joint of the midrib of a sporophyll. *Cystocarp* low conical and shortly beaked, settled on the midrib of an ultimate leaflet. Colour dark-purplish red when recent, becoming beautiful red in drying. Substance soft and membranaceous except thickened midrib, and the plant firmly adheres to paper in drying.

Hab.: On rocks and stones between tide-marks in calm places. Iwanai and Shiwoya (Prov. Shiribeshi), Kamoito (Prov. Teshiwo), Hakodate (Prov. Oshima) in Hokkwaido; Cape Iwai-zaki and Yone-zaki (Prov. Rikuzen). Fruits: April-May.

PL. XXXI, Fig. 1-8. Fig. **1**: *Apoglossum violaceum J. Ag.* in nat. size.—Fig. **2**: surface of the membrane showing the course of veinlets, $\frac{22}{1}$.—Fig. **3**: portion of the membrane of the lower part of frond showing prickle-like processes on both surfaces, $\frac{54}{1}$.—Fig. **4**: longitudinal section of a leaflet, $\frac{220}{1}$.—Fig. **5**: cross-section of midrib and membrane, $\frac{91}{1}$.—Fig. **6**: cross-section of a sorus, $\frac{91}{1}$.—Fig. **7**: cystocarps, $\frac{22}{1}$.—Fig. **8**: vertical-section of a cystocarp cut perpendicular to the plane of sporophyll, $\frac{91}{1}$.

PL. XXXII, Fig. 13-17. Fig. **13**: surface-view of the terminal portion of a very young leaflet showing arrangement of cells, $\frac{340}{1}$.—Fig. **14**: portion of the surface-view of membrane showing veinlets and cellules; *a* indicates the position of the midrib, $\frac{220}{1}$.—Fig. **15**: surface-view of tetrasporic sporophylls, ca. $\frac{16}{1}$.—Fig. **16**: arrangement of tetrasporangia seen through the cortical layer of sorus, $\frac{220}{1}$.—Fig. **17**: vertical section of a cystocarp cut along the midrib of sprophyll, $\frac{91}{1}$.

Apoglossum J. Agardh 1876.

ぬめはのり属.

DELESSERIEAE (DELESSERIACEAE).

このはのり亞科(このはのり科).

體ハ扁平,薄キ膜狀ニシテ中肋ヲ存シ,中肋ヨリ副出スル枝ニ依テ分枝スルモノニシテ,其他ニハ枝ヲ分ツコトナク,顯微鏡的ノ細脈ヲ中肋ヨリ斜ニ横ニ發出シ,其中間ニ存スル細胞ハ一定ノ順序ナク排列ス(中肋ヨリ正シク扇狀放射狀ニ發出スル如キ排列ヲナスコトアラズ). 成長點細胞ハ横ニ關節シテ明ナリ,而シテ成長點以下ノ細胞ハ漸次左右ニ分裂シテ規則正シク排列シ,其部ノ中肋ノ細胞ノ長サト同樣ノ幅ニテ横ニ關節ス;中肋ハ後漸次皮層ヲ以テ蔽ハル.——四分胞子群ハ或ハ小葉ノ中肋ノ兩側ニ生ジテ互ニ並行セル長キ線狀ノ群ヲナシ,或ハ特ニ變形セザル葉又ハ特ニ變形セル成實葉ノ全面ニ生ズルコトアリ;胞子ハ三角錐狀ニ分裂ス. 胎原列ハ,概子,中肋ノ細胞ニ生ジテ散在ス. 囊果ハ概子副出セル小サキ成實葉ニ限ラレテ生ジ,外面ニ(多クハ兩面ニ)隆起シ,中肋ノ上ニ坐ス;胎座ハ多クハ僅ニ形成セラレ,時トシテハ單條又ハ僅ニ分岐セル絲狀細胞ヲ以テ胎座ト果皮トヲ結ビ付ク;成胞絲ハ多少弯狀ニ隆起ス;胞子ヲ成熟スル絲ハ同時ニ形成セラレ,綏ク分岐シ或ハ同時ニ胞子ヲ形成シ,數個ノ成胞裂片即チ小仁ニ分レ,小仁ハ密ニ團集ス;胞子ハ成胞絲ノ各細胞ヨリ悉ク形成セラレ不規則ニ團集ス.

本屬ハ元ト Delesseria 屬中ニ含マレタル種類ヨリ別ニ設置セラレタルモノニシテ,其之ト異ナル點ハ特別ノ小葉ニ四分胞子ヲ有スルコトニ於テ存ス,而シテ多少明ニ微細ナル細脈

ヲ有スルコトト，中肋ヨリ副出スル枝ニテ分岐スルコトトヲ以テ本屬ノ著シキ性質トナシ以テ他ノ近緣ノ屬ト分ツ．　本屬ニ屬スル種類ハ6-7種ニシテ專ラ「オーストラリア」ニ產ス；本邦ニハ下ノ一種アルノミ．

屬ノ名ハ Apo (無シニ) ト glossa (舌) トヨリ成ル．

Apoglossum violaceum (Harv.) J. Ag.

ぬめはのり　岡村稱．

第XXXI圖版，1-8圖；第XXXII圖版，13-17圖．

體ハ單條ニシテ分岐セザル始原體ヲ有シ，始原體ハ中肋ヲ存シテ其兩側ニ廣キ翼狀ノ膜ヲ付ケ，下部ハ翼片ノ破損スル爲メ多少莖ノ如キ觀ヲ呈シ，莖ハ稍圓柱狀ニシテ直徑2-3mm.ヲ有シ，扁平ニシテ開展セル盤狀根ヲ以テ立ツ；體ノ高サ概子30 cm.以上アリ．　枝ハ體ノ兩面ニ於テ中肋ノ兩側ヨリ三四回副出シテ以テ羽狀ニ互生シ，枝ノ或モノハ甚シク伸ビテ數條ノ主枝トナル；而シテ往々甚シク多數ニ枝ヲ發生スルコトアリ．　各部ノ枝ハ線狀披針狀ニシテ頂端ハ細クナリ基部ハ稍細リテ太ク隆起セル中肋ヲ存シ，中肋ハ厚ク皮層ヲ被ムル．膜ハ極メテ薄クシテ軟弱，網狀ニ列レル細脈ヲ存シ，緣邊ハ波狀ニ縮皺シ，細鋸齒ヲ存シ或ハ不規則ナル細齒ヲ存ス，而シテ體ノ下部ナル膜ハ棘狀ニ分岐セル細小ナル突起ヲ兩面ヨリ發出ス．　始原部ノ膜ハ幅往々10 mm.以上廣キコトアリテ之ヨリ漸次上方ニ細クナルナリ．

四分胞子群ハ線狀ニシテ最末ノ副枝及其一回前ノモノノ中肋部ニ形成セラレ，其之ヲ有スル副枝ハ成實葉ノ如キ小葉ヲナス；群ハ中肋ノ兩側ニ形成セラレタル斑ノ相癒合シテ成レルモノニハアラズ．　四分胞子囊ハ成實葉ノ中肋ヲ成セル細胞ト連絡セル皮下細胞ノ枝トシテ生ゼラレタル細胞ヨリ變成ス．　囊果ハ低

キ圓錐形ニシテ短嘴ヲ戴キ小葉ノ中肋上ニ坐ス．　色ハ新鮮ノ時ハ暗紫紅色ニシテ，乾燥スル時ハ美シキ紅色ヲナス．　質ハ太キ中肋ノ外ハ軟クシテ膜質，乾燥スル時ハ密ニ紙ニ付着ス．

產地：靜ナル場所ノ潮線間ニアル岩石ノ上ニアリ．　後志國岩內及ビ鹽谷，天鹽國カモイト，函館；　陸前岩井岬，米崎．果實：—四五月．

第XXXI圖版，1-8圖．**1**：Apoglossum violaceum J. Ag. ノ自然大．—**2**：膜ノ表面ニ細脈ノ走レル狀ヲ示ス，$\frac{22}{1}$.—**3**：體ノ下部ノ膜ノ一部ニシテ，兩面ヨリ棘狀突起ヲ生ズル狀，$\frac{54}{1}$.—**4**：小枝ノ縱斷面，$\frac{220}{1}$.—**5**：中肋ト膜トヲ橫斷シタルモノ，$\frac{91}{1}$.—**6**：四分胞子群ノ橫斷面，$\frac{91}{1}$.—**7**：囊果，$\frac{22}{1}$.—**8**：成實葉ノ面ニ直角ニ切リタル囊果ノ縱斷面，$\frac{91}{1}$.

第XXXII圖版，13-17圖．**13**：極メテ幼キ小葉ノ頂部ノ表面ニ於ケル細胞排置ノ狀ヲ示ス，$\frac{340}{1}$.—**14**：膜ノ表面ノ一部ニシテ細脈ト中間ノ細胞トノ排列ヲ示ス；*a*，中肋ノ位置，$\frac{220}{1}$.—**15**：成實葉，約$\frac{16}{1}$.—**16**：四分胞子群ノ皮層ヲ透シテ見タルモノニシテ，四分胞子囊ガ中肋ノ一細胞ニ連ナレル細胞ノ枝トシテ成レルモノヨリ生ズル狀ヲ示ス，$\frac{220}{1}$.—**17**：成實葉ノ中肋ニ沿ヒテ斷リタル囊果ノ縱斷面，$\frac{91}{1}$.

Euzoniella flaccida (Harv.) Fkbg.

Nom. Jap.: *Kushi-no-ha.*

PL. XXXII, Fig 1-6.

Euzoniella flaccida (Harv.) Fkbg. Rhodom. (1901) p. 365, t. 5, f. 10; De Toni Syll. Alg. IV, p. 1029; 岡村，日本藻類名彙，p. 69.—*Polyzonia flaccida* Harv. Phyc. Austr. tab. XLII B; J. Ag. Sp. Alg. II, 3, p. 1165; J. Ag. Florid. Morph. t. XXXII, f. 24.

Hab.: On other algae between tide-marks. Prov. Noto; Cape Nomo in Prov. Hizen; Shinhama (Prov. Iyo).

PL. XXXII, Fig. 1-6. Fig. **1**: *Euzoniella flaccida* Fkbg. growing on another alga, ca. $\frac{2}{1}$.—Fig. **2**: portion of a frond showing the arrangement of "Kurz-" and "Lang-trieb," $\frac{4:2}{1}$.—Fig. **3**: piece of a "Kurztrieb" showing the insertion of lacineae, $\frac{9:1}{1}$.—Fig. **4**: portion of a frond bearing stichidia, $\frac{4:2}{1}$.—Fig. **5**: stichidium viewed from the ventral side, $\frac{9:1}{1}$.—Fig. **6**: scutate disc, $\frac{9:1}{1}$.

Annexed woodcuts on p. 154: Fig. **1**: "Kurztrieb" viewed from the dorsal side, $\frac{9:1}{1}$.—Fig. **2**: the same viewed from its lower edge, $\frac{9:1}{1}$.—Fig. **3**: cross section of the same; *a*, *a*, marginal cells of the Kurztrieb; *b*, *b*, median cells of the same, $\frac{220}{1}$.—Fig. **4**: stichidium viewed from the dorsal side, $\frac{9:1}{1}$.

Euzoniella Falkenberg 1901.

くしのは属.

POLYZONIEAE (RHODOMELACEAE).

くしのは亜科, ふぢまつも科.

體ハ匍匐シ, 吸盤狀付着器ヲ以テ他物ニ固着シ, 或ハ匍匐スル軸ヨリ直立スル部分ヲ有スルモアリテ多クハ多少扁平ナリ. 充分ニ形成セラレタル多管軸ハ概ネ六條乃至其以上ノ周心細胞ヲ有シ, 終生皮層細胞ヲ被ムルコトナシ. 體ハ總テ腹背ノ性質ヲ存シ, 長條ト短條トニ分化シ, 短條ハ多少葉狀ニシテ, 長條ハ葉狀ノ短條ヲ付ク. 長條ハ眞直ナル若クハ背面ノ方ニ曲レル頂端ヲ以テ伸長シ, 其兩緣ヨリ葉狀ノ短條枝ヲ互生ス. 短條枝ハ各二關節宛ヲ距テヽ出デ外長性ナリ; 即チ其發生スルニ當リテハ, 中軸細胞ヨリ周心細胞ヲ分裂セザル前ニ於テ生ゼラレタルモノトス. 而シテ, 短條枝ヲ有セザル關

節ノ緣邊ヨリハ早晩長條ヲ生ズ, 此長條ハ內長性ナリ; 即チ旣ニ周心細胞ノ出來上リタル後中軸ヨリ內長的ニ生ズルモノトス. 短條枝ハ葉狀ニ形成セラレ, 體ノ頂端ノ方ニ向テ多少多ク枝ヲ出シタル葉片ヲナスヲ以テ, 短條ノ腹背兩面ハ均齊ニ分枝セザルガ故ニ不平均ナリ, 而シテ其一方ノ面ニ向テ出タル枝ハ各相離レテ存スルカ又ハ互ニ相癒着シテ葉狀ヲナス. ——四分胞子囊ハ長條ノ一部「スティキジア」狀ニ變形シタルモノ若クハ特ニ此目的ノ爲ニ變ジタル小サキ長條ニ生ズ, 此長條ハ枝ヲ有スルコト稀ナラズ. 「スティキジア」ハ斯ノ如クシテ長條ノ上部ヲ占ムルカ或ハ短條ノ上ニテ恰モ短條ノ腋ヨリスルガ如ク生ジ, 其兩緣ニ多少簡單ナリタル枝ヲ存シ, 背部ハ增厚シ, 此處ニ其中央線ニ沿フテ四分胞子囊ノ一縱列ヲ生ズ; 四分胞子ノ熟スルトキハ甚シク膨大シ, 外面ハ不規則ニ排列セル數多ノ細胞ニテ全ク被蔽セラル. 精子器ハ短柄ヲ有シ, 緻密ナル細胞組織ヨリ成リ, 其上部ノ表面ニ小サキ細胞ヨリ成レル精子ヲ着ク, 而シテ精子器ハ短條ノ最下部(即チ, 軸ノ方ニ接近セルモノニシテ, 短條ノ基部ニアルモノ)ノ枝ヨリ變形ス. 胎原ハ長條ノ成長點付近ノ處ニ多數ニ形成セラレ, 短條ノ最下部ノ枝ノ下ヨリ二番目ノ細胞ヨリ生ジ, 僅ニ膨大ス. 囊果ハ無柄ニシテ卵形, 薄キ果皮ヲ有シ, 成胞絲ハ密集シ, 其頂端ニ胞子ヲ戴ク; 胞子ハ卵形又ハ棍棒狀ナリ.

本屬ニ屬スル種類ハ7種ニシテ概ネ南方ノ海ニ多ク, オーストラリア, フアンデイーメンスランド, ニウゼーランド, オークランド及ビカムベル島ニ產ス. 模範種ハ Euzoniella incisa (J. Ag.) Fkbg. (=Polyzonia incisa J. Ag.) ニシテ現今本邦ニ知ラルヽ種類ハ頗ル模範種ヨリ遠ザカレリ. 本屬ハ從來 *Polyzonia* 屬ノ下ニ編入セラレタレドモ, Falkenberg 氏之ヨリ分ケテ別ニ Euzoniella ノ屬ヲ設ケタリ; 其之ト異ル點ハ, 長條ノ周心管ノ皮層

細胞ヲ被ラザルコト，其腹部ニ翼狀片ヲ有セザルコト，及ビ吸盤狀付着器ノ二個細胞ヨリ成ルコト（Polyzonia ハ之ガ多數ノ細胞ヨリ成リテ長條ノ腹部ニ翼狀片ヲ有シ，且皮層細胞アリ），トニ依リテ Polyzonia ト區別セラル．

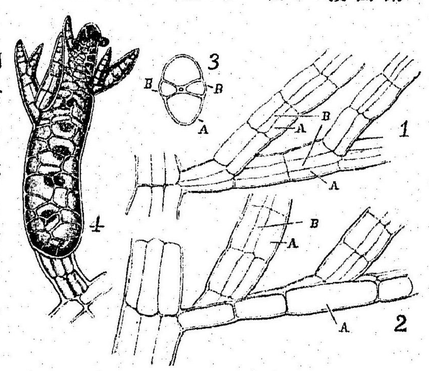
屬ノ名ハ Eu（善キ）ト Zona（橫帶）トヨリ成リ，ella ハ小サキ意ナリ．

Euzoniella flaccida (Harv.) Fkbg.

くしのは　岡村稱

第XXXII圖版，1-6圖．

體ハ他ノ海藻上ニ匍匐セル莖ヲ有シ，其節々ヨリ吸盤狀付着器ヲ出シテ他體ニ固着シ，此部ヨリ數條ノ枝ヲ生ズ；枝ハ游離シテ 1-2 cm. 長ク，美シク羽狀ヲナシ，其幅約 2-3 mm. アリ．　短條ハ二細胞ヅヽヲ距テヽ互生シ，殆ド直角ニ出デ，腹面則チ付着物ノ方ニ向テ弧狀ニ反リ，半羽狀ナリ（半羽狀トハ一條ノ軸ノ左右若クハ上下兩半ニ均シク羽狀ヲナサズシテ，其一半ノミニ羽狀ヲナスヲ云フ），而シテ其裏面則チ腹面ハ枝ヲ生ズルコトナク，上面則チ背面ヨリ概子 5-8 條ノ小枝ヲ並ビ生ズ（之ヲ齒片ト稱ス），其狀恰モ櫛ノ齒ヲ上ニシテ立タルガ如シ，之ヲ葉ト稱ス．　短條ハ扁平ニシテ，上下兩側（上トハ莖ノ頂部ニ向ヘル方ノ側ニシテ，下



Euzoniella flaccida (Harv.) Fkbg.　くしのは．
第 1 圖：短條枝ヲ背面ヨリ見テ，之ト齒片トノ構造ヲ示ス，$\frac{91}{1}$.
第 2 圖：短條枝ヲ其狹キ側面ヨリ見タルモノ，$\frac{91}{1}$.
第 3 圖：短條枝ノ橫斷面，$\frac{220}{1}$.
第 4 圖：スティキジアヲ其背面ヨリ見タルモノ，$\frac{91}{1}$.

トハ體ノ下部ノ方ニ向ヘルモノ）ハ各一個ノ大ナル細胞（木版圖 1-3 *a*）ヨリ成リ，其中間ニ各一條ノ細キ細胞（木版圖 1-3 *b*）ヲ有スルコト恰モ細脈ノ如シ；此構造ハ表裏兩面トモ同ジ，而シテ先端ノ方ニ至リテハ一列ノ細胞トナル．　齒片ハ短條枝ノ背面ヨリ二細胞ヅヽヲ距テヽ出デ，莖ニ近キ方ノモノホド長クシテ遠キ方ノモノホド短ク，先端皆細ク，全ク一列ノ細胞ヨリ成ルコトアリ，或ハ下部僅ニ少數ノ周心管ヲ以テ成ルアリ，其構造ハ其之ヲ出セル短條ト同樣ナリ；而シテ各關節ノ長サハ其橫徑ヨリ稍長クシテ節々少シククビルヽコトアリ．　四分胞子ヲ有スル枝ハ長條ヨリ變形シテ「スティキジア」狀ヲナシ，此目的ノ爲ニ變形シタル長條ハ短クシテ，短條ト同一ノ側ニ於テ其上ナル細胞ヨリ殆ド直角ニ出デ，背面ノ方ニ反リテ腹面ニハ凹形ヲナシ，上部ノ兩緣ヨリ僅ニ短キ短條ヲ有スルモノアリ；「スティキジア」ノ腹面ハ三個ノ細胞列（5 圖）ヨリ成レドモ，背面ハ不規則ニ並ベル數個ノ細胞ヨリ成リ（木版圖 4）其部ニ四分胞子ヲ有ス．　長條ノ橫斷面ハ六條ノ周心管ヨリ成リ皮層細胞ヲ被ムルコトナシ．　色ハ薄紅色ニシテ，膜質ナリ．

產地：潮線間ニ在ル海藻上ニ匍匐ス．　肥前野母崎，能登．　四分胞子：—夏季．

分布：ニウホルランドノ西南岸ニ產ス．

第XXXII圖版，1-6 圖．　**1**：Euzoniella flaccida (Harv.) Fkbg. ノ自然ノ狀態，約 $\frac{2}{1}$.—**2**：短條（3 個）ト長條（1 個）トノ排置ヲ示セル體ノ一部，$\frac{42}{1}$.—**3**：短條ノ背面ヨリ齒片ノ出ル狀ヲ示ス，$\frac{91}{1}$.—**4**：四分胞子托ヲ有スル體ノ一部，$\frac{42}{1}$.—**5**：「スティキジア」ヲ其腹面ヨリ見タルモノ，$\frac{91}{1}$.—**6**：吸盤狀付着器，$\frac{91}{1}$.

Hypoglossum geminatum Okam. sp. nov.

Nom. Jap.: *Benika-nori.*

PL. XXXII, Fig. 7-12.

Diagn.: Frond minute, repenting, slender, linear-lanceolate, with corticated midrib, veinless, repeatedly branching in geminate manner by proliferating similar segments from the midrib unifariously. Margin entire or fimbriated in older portion. Cystocarps sessile, sitting on the midrib, urceolate with a wide ostiole.

Hab.: On the fronds of larger algae between tide-marks. Enoshima in Prov. Sagami; Misaki (Prov. Sagami, Yendo) Fruit:—Spring.

Descr.: Only a few small but fully grown specimens have been found growing on other algae. Primary frond prostrates and creeps over other algae by the formation of attachments at several places. From this there rise several branches on the upper surface of frond by proliferating linear-lanceolate segments from both sides of the midrib in geminate manner. They give rise to those of the next order in the similar way and the plant attains the length of scarcely 2 cm. Branches of every order as well as the primary frond are linear-lanceolate, about 1 mm. broad, midribed and furnished with a thin membrane which is destitute of veins; they attach themselves to substratum by disc-shaped attachments from the midrib as shown in fig. 8 and 9, and also marginal hair-like root fibres are here and there produced. The midrib is more or less thickly corticated and opaque in lower portion of frond, while in the upper it is almost translucent though not without corticications. Margin is entire, but in older portions of frond linear transverse rows of cells near the margin elongate beyond the general outline after the

Hypoglossum geminatum Okam. sp. nov., $\frac{1}{1}$. ベニハノリ

manner of minute finger-like processes. Tetraspores unknown. Cystocarps sessile on the midrib, urceolate with a wide ostiole, whose margin is slightly lobed. Colour red. Substance thin and delicate.

In external appearance and size the present plant very much resembles *Hypoglossum barbatum* Okam. (Illustr. Mar. Alg. p. 19-21, PL. VII), but the mode of ramification and corticated midrib, amongst others, separate the former from the latter. The opposite ramification of the present plant makes us to remind that of *Hypoglossum dendroides* (Harv.) J. Ag.; but the difference between the two is so much evident that no further demonstration is needed for.

Annexed wood-cut on p. 156: frond of *Hypoglossum geminatum* Okam. in nat. size.

PL. XXXII, Fig. 8-12. Fig. **7**: portion of frond, $\frac{22}{1}$.—Fig. **8**: portion of branch viewed from the under-surface showing a scutate-disc produced from a constricted part, $\frac{18}{1}$.—Fig. **9**: holdfast produced from the apex of a segment, $\frac{54}{1}$.—Fig. **10**: portion of the surface of frond showing a geminate proliferation; *a*, corticated midrib; highly magd.—Fig. **11**: surface-view of the membrane; *a*, cortication of the midrib; $\frac{140}{1}$.—Fig. **12**: cystocarp, ca. $\frac{13}{1}$.

Hypoglossum geminatum 新種.

ベニハノリ　岡村稔.

第XXXII圖版, 7-12圖.

Hypoglossum 屬ノ性質ハ岡村, 日本海藻圖說第一卷第二冊第23頁ニアリ.　屬ノ名ハ Hypo (下) ト glossum (舌) トヨリ成ル.

性質: 體ハ小ニシテ匍匐シ, 細ク, 線狀ー披針狀ニシテ, 皮層アル中肋ヲ存シ, 細脈ナク, 體ノ一方ノ表面ヨリ中肋ノ兩側ニ於テ二條ヅヽ同樣ノ部分ヲ副出シ, 數回反復シテ以テ分岐ス.　緣邊ハ全緣ナレドモ, 老成部ニ於テハ恰モ總ヲ付ケタル

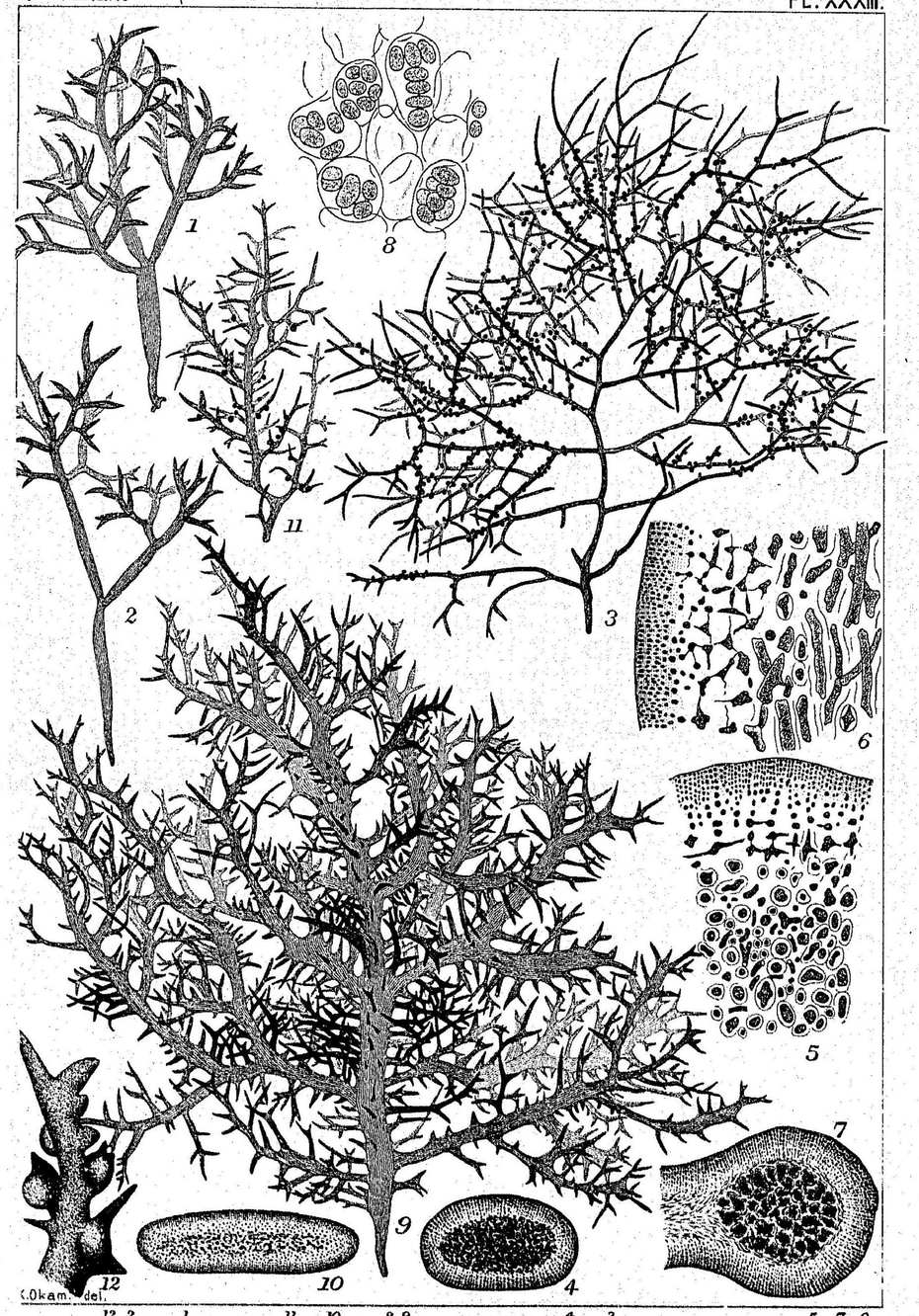
如キ觀ヲナス. 果嚢ハ無柄ニシテ中肋ノ上ニ坐シ,壺狀ニシテ廣キ口ヲ有ス.

産地: 潮線間ニ生ズル稍大ナル海藻上ニ匍匐ス;相模江ノ島;三崎(遠藤). 果實:—春季.

記載: 葉ニ二三ノ成熟セル小ナル體ヲ他ノ海藻上ニ發見セリ. 體ハ初メ平臥シ,諸所ニ付着器ヲ形成シテ他ノ海藻上ニ匍匐ス. 平臥セル部分ヨリ數條ノ枝ヲ上方ニ副出シ,更ニ又同樣ノモノヲ同樣ニ副出シテ分岐ス;其副出スル位置ハ中肋ノ兩側ヨリ對生スルモノトス;斯クテ體ノ長サ漸ク2 cm.ヲ超ヘズ. 各部ノ枝並ニ始原ノ體ハ線狀披針狀ニシテ約1 mm.ノ幅ヲ有シ,中肋ヲ存シ,薄キ膜ヲ着ク,膜ニハ細脈ナシ;而シテ中肋ヨリ盤狀付着器ヲ形成シテ他物ニ固着スルコト第8-9圖ニ示スガ如ク,又緣邊ノ所々ヨリ毛狀根ヲ生ズ. 中肋ハ多少厚ク皮層ヲ以テ蔽ハレ,體ノ下部ニテハ不透明ナレドモ,上部ニテハ稍半透明ナリ,然レドモ其部モ皮層ナキニアラズ. 緣邊ハ全緣ナリ,然レドモ老成部ニアリテハ緣邊ニ近ク横ニ並列セル細胞列稍伸ビ出デ,以テ小サキ指狀ノ突起ヲナス. 四分胞子嚢ハ詳ナラズ. 嚢果ハ無柄ニシテ中肋ノ上ニ坐シ,廣キ口ヲ有スル壺狀ニシテ,口ノ緣邊ハ少シク裂片ヲナス. 色ハ紅色ナリ. 質ハ薄クシテ軟弱ナリ.

體ノ大サト其外見トヲ以テスルニ本種ハ本邦所產ノ種類中ニテハ Hypoglossum barbatum Okam. (ひげべにはのり,岡村,日本海藻圖說第七圖版)ニ類スレドモ,分岐ノ方法ト皮層ヲ有スル中肋トハ就中之ト區別スル要點ナリトス. 本種ノ分岐ノ對生ナルハ「オーストラリア」ニ產スル Hypoglossum dendroides (Harv.) J. Ag. ト其相類スルコトヲ想起セシムト雖モ,二者ノ差ノ甚大ナルハ敢テ多言ヲ要セザル處ナリ.

第三十三圖版　　PL. XXXIII.



Gigartina tenella Harv. すぎのり. Figs. 1-8.
Gigartina Teedii (Roth) Lamour. ま

第XXXII圖版, 7-12圖. **7**: Hypoglossum geminatum Okam. (體形ハ156頁ニ本版圖ニテ示セリ)ノ體ノ一部ヲ廓大シタルモノ, $\frac{22}{1}$.—**8**: 枝ノ一部ヲ裏面ヨリ見テ稍クビレタル箇所ヨリ盤狀根ノ出ル狀ヲ示ス, $\frac{18}{1}$.—**9**: 枝ノ頂端ニ付着器ノ形成セラレタルモノ, $\frac{54}{1}$.—**10**: 體ノ表面ノ一部ヲ廓大シテ幼キ枝ノ双生スルヲ示ス; *a*, 皮層ヲ被レル中肋; 廓大.—**11**: 膜ノ表面; *a*, 中肋ノ皮層, $\frac{140}{1}$.—**12**: 嚢果, 約, $\frac{13}{1}$.

Gigartina tenella Harv.

Nom. Jap.: *Sugi-nori.*

PL. XXXIII, Fig. 1-8.

Gigartina tenella Harv. Char. of New Algae in Proceed. Amer. Acad. IV, 1859, p. 331, n. 52; Suring. Alg. Jap. p. 29, t. XVII A; J. Ag. Epicr. p. 204 (nomen); De Toni Phyc. Jap. Nov. (1895) p. 24, n. 32; Id. Syll. Alg. IV, p. 201; Okam. Alg. Jap. Exsic. (日本海藻標品) Fasc. I, no. 9; 岡村, 日本藻類名彙 p. 48.

Fronds coespitose, rising from a knob-like disc, compressed, linear, more or less irregularly pinnate with alternate and opposite branches intermixed, often densely branched, distichous. Branches patent, tapering to sharp point, often strongly recurved. The breadth of branches much varies in different fronds according to their different habitats, ranging from scarcely 1 mm. to 2-3 or even more than 5 mm. There are some broader ones which are often difficult to distinguish them from *Gigartina Teedii* and *Gig. intermedia*. Plant attains the height of 5-12 cm. Cystocarps almost sphaerical, minute, sessile and often aggregated near to each other along the sides of branches. Colour dark brownish red with bluish iridescence. Substance cartilaginous becoming rather rigid in drying.

Hab.: On rocks between tide-marks, often in tide-pools. Kikaiga-shima (C. Wright, Textor), Kiushiu; Provs. Tōtōmi, Shima, Idzu, Sagami, Boshyū, Hōki, Yechi-zen, Yechigo and Noto; Fusan (Corea). Cystocarps:—summar.

The present plant shows a close relationship with *Gigartina intermedia* on the one hand and *Gig. Teedii* on the other. *Gigartina acicularis* (Wulf.) Lamour, also has so strong external resemblance with the present plant that it is recorded to have been collected at Yokohama and other localities by several collectors such as Martens, Schottmueller and Kaempfer (De Toni Phyc. Jap. Nov. 1895, p. 24). It is nothing but a slenderer form of the present species, for, as far as I know, *Gig. acicularis* does not grow in this country.

PL. XXXIII, Fig. 1-8. Fig. **1-2**: sterile, broader fronds of *Gigartina tenella* Harv. found in tide-pool, $\frac{1}{1}$.—Fig. **3**: ordinary, slenderer fronds bearing cystocarps, $\frac{1}{1}$.—Fig. **4**: cross-section of frond, $\frac{42}{1}$.—Fig. **5**: portion of the same, $\frac{220}{1}$.—Fig. **6**: portion of longitudinal section of frond, $\frac{175}{1}$.—Fig. **7**: vertical section of a cystocarp, $\frac{42}{1}$.—Fig. **8**: portion of a neucleolus, $\frac{220}{1}$.

Gigartina Stackh. 1809.

すぎのり屬.

GIGARTINEAE (GIGARTINACEAE.)

すぎのり亞科（すぎのり科.）

體ハ圓柱狀，扁圓，扁壓又ハ葉狀ニ扁ク，稍厚ク，多少密ニ兩緣ヨリ，稀ニ叉狀ニ分岐シ，又表面ヨリ副枝ヲ生ズ，而シテ同樣ノ形セル或ハ概テ短クナリタル或實枝ヲ兩緣若クハ表面ヨリ發シ，成實枝ハ單條又ハ分岐ス. 體ノ構造ハ明ニ絲組織ヨリ成ル：即チ，縱走セル細キ絲狀細胞アリテ其處此處ニ叉狀ニ

分岐シ以テ髓層ヲナシ，此ヨリ表面ノ方ニ屢々叉狀ニ分岐セル念珠狀皮層絲ヲ發出ス；髓部及ビ內皮部ノ細胞ハ皆橫ニ連絡點ヲ形成シテ互ニ相連ナルコト網ノ如シ. 成長點ハ扇狀ニ放射セル絲組織ナリ. 粘質强ク軟骨樣ナリ.——胎原ハ皮層絲ノ基部ニ多數ニ形成セラレ，多クハ鉤狀ニ屈曲セル三個細胞ヨリ成リ，其之ヲ支持スル皮層絲ノ一關節ノ甚シク肥大セルモノニ付着ス；此肥大セル細胞ハ助細胞トナル. 熟シタル助細胞ハ體ノ內部ノ方ニ成胞絲ヲ發出ス；成胞絲ハ各方面ニ盛ニ分岐シ，往々周圍ノ細胞ト連絡點ヲ作リテ（或ハ癒合ニ依リテ）結ビ付キ，所々組織ノ稍弛緩シタル部分ニ向テ枝ヲ生ジ，此等ノ枝ノ末端ノ數個ノ細胞胞子ト成リ以テ小仁ヲナス. 仁ハ斯クテ數多ノ小仁ヨリ成リ，小仁ハ不規則ニ錯綜セル絲組織ノ網ノ目ノ所ニ團集セル胞子ヨリ成リ，此等多數ノ小仁ノ相集リタル仁ハ又之ヲ圍繞スル絲組織ヲ存ス. 嚢果ハ多少半球狀ニ膨起セルモノニシテ往々多數相集リ生ジ，時トシテハ壁ヲ以テ繞ラセル如クナルアリ或ハ突起ヲ戴クコトアリ. 四分胞子嚢ハ體ノ表面下ニ群生シ，多少外面ニ膨起シ，明ナル境界ナク團集シ，又互ニ一定ノ順序ナク，球狀ニシテ十字樣ニ分裂ス.

所々ノ海ニ產スル多數（50以上）ノ種類アリ；此屬ハ種々ナル模式ヨリ成レル多數ノ種類ヲ含メルヲ以テ，充分精確ナル基礎的研究ヲナサバ，多分ハ數個ノ別々ナル屬ニ分タルヽナルベシト思ハル. 本邦ノ種類ハ多カラザレドモ，暖地ノ代表者ト寒地ノモノトヲ具ハルモノアリ.

屬ノ名ハ Gigarton（葡萄ノ種子）ニ取レリ，即チ嚢果ノ形狀之ニ類スルモノアレバナリ.

Gigartina tenella Harv.

すぎのり.

第 XXXIII 圖版, 1-8 圖.

體ハ叢生シ,瘤狀根ヨリ直立シ,扁壓,線狀,體ノ兩緣ヨリ多少不規則ニ羽狀ニ分岐シ,互生並ニ對生ノ枝ヲ交ヘ,往々甚シク枝ヲ分ツコトアリ. 枝ハ廣開シ,尖銳ニ終リ,往々甚シク反曲スルコトアリ,枝ノ强クシテ尖銳ナルハ,すぎのりノ名アル所以ナリ. 枝ノ幅ハ產所ノ狀態ニ從テ種々ニシテ,僅ニ 1 mm. ノ如キ細キモノヨリ通常 2 mm. ニ達シ,時ニハ 5 mm. 以上ナルコトサヘアリ. 其幅廣キモノハ往々ニシテ Gigartina Teedii 及ビ Gig. intermedia ト區別スベカラザルガ如クナルモノアリ;體ノ高サハ 5-12 cm. ニ達ス. 囊果ハ略ボ球狀ニシテ,小サク,無柄ニシテ往々數個緣邊ニ相集リ生ズ. 色ハ濃キ暗紅色ニシテ瑠璃色ノ閃光ヲ有ス. 質ハ軟骨樣ニシテ乾燥スルトキハ稍硬シ,紙ニ付着セズ.

產地: 潮線間ノ岩石ニ生ジ往々潮溜リニアリ. 鬼界島 (C. Wright, Textor), 九州, 遠江, 志摩, 伊豆, 相模, 安房, 伯耆, 越前, 越後, 能登; 釜山. 囊果:—夏季.

本種ハ一方ニハ Gigartina intermedia (かいのり) ト一方ニハ Gig. Teedii (しきんのり) トニ類ス; 又太西洋ニ產スル Gig. Acicularis (Wulf.) Lamour. モ甚シク本種ニ類スルヲ以テ, Martens, Scottmueller 及ビ Kaempfer 氏ノ如キハ或ハ之ヲ橫濱ニ,或ハ他ノ所ニ獲タリト記セドモ,予ノ知ル處ニテハ,此種ハ本邦ニハ產スルコトアラズシテ,氏等ガ取テ以テ該種ト見做シタルモノハ實ニ本種ノ細キ枝ヲ有スルモノヲ誤リタルナルベシト思考ス. 本種ハすぎのり又まつばのりト稱シ,粉料トシ用フ,安房,伊豆七島多ク之ヲ出ス.

第 XXXIII 圖版, 1-8 圖. **1-2**: 潮溜リニ在リタル實ナキ,幅廣キ Gigartina tenella, すぎのり, $\frac{1}{1}$.—**3**; 普通ノ細キ形セルモノ, $\frac{1}{1}$.—**4**: 體ノ橫斷面, $\frac{42}{1}$.—**5**: 同上ノ一部, $\frac{220}{1}$.—**6**: 體ノ縱斷面ノ一部, $\frac{175}{1}$.—**7**: 囊果ノ縱斷面, $\frac{42}{1}$.—**8**: 小仁ノ一部, $\frac{220}{1}$.

Gigartina Teedii (Roth) Lamour.

Nom. Jap.: *Shikin-nori.*

PL. XXXIII, Fig. 9-12.

Gigartina Teedii (Roth) Lamour. *Essai p. 49, t. 4, f. 11*; J. Ag. Sp. Alg. II, p. 266; Id. Epicr. p. 192; Ardiss. Phyc. Med. I, p. 168; Hauck Meeresalg. p. 136, f. 54; Harv. Phyc. Brit. tab. 266; De Toni Syll. Alg. IV, p. 202; Okam. Alg. Jap. Exsic. (日本海藻標品) Fasc. II, no. 57; 岡村, 日本藻類名彙, p. 26.—*Ceramium Teedii Roth Cat. bot. III, p. 108, t. 4.—Fucus Teedii* Turn. Hist. Fuci. t. 208.—*Chondroclonium Teedii* Kuetz. Sp. Alg. p. 740; Id. Tab. Phyc. XVII, t. 66.—*Chondrocanthus Teedii* Kuetz. Phyc. gener. p. 399.

Plants often densely tufted forming a globular mass. Fronds flat, linear, disticho-pinnate, densely branched in alternate and opposite manner, often not without dichotomous segments. Branches very patent, slightly flexuose, shorter and longer intermixed, the shorter ones appearing like marginal teeth, which soon grow up into simple or more or less decompound branches. In a robust frond the surface often is not free from proliferations which are of the shape of minute teeth. Plant attains the height of 10-15 cm. with the breadth of

frond varying from a few mm. to 4·5 mm. in the main segments, gradually becoming narrower above, and the outline of frond is broader than long. Cystocarps hemispherical, small, borne on the side or base of minute spines. Colour purple-red varying to greenish. Substance rather soft cartilaginous and the plant imperfectly adheres to paper in drying.

Hab.: On rocks between tide-marks near hight-tide, often in tide-pools. Provs. Totomi and Sagami; Yokosuka (Prov. Sagami, Savatier). Cystocarp: late spring—summar.

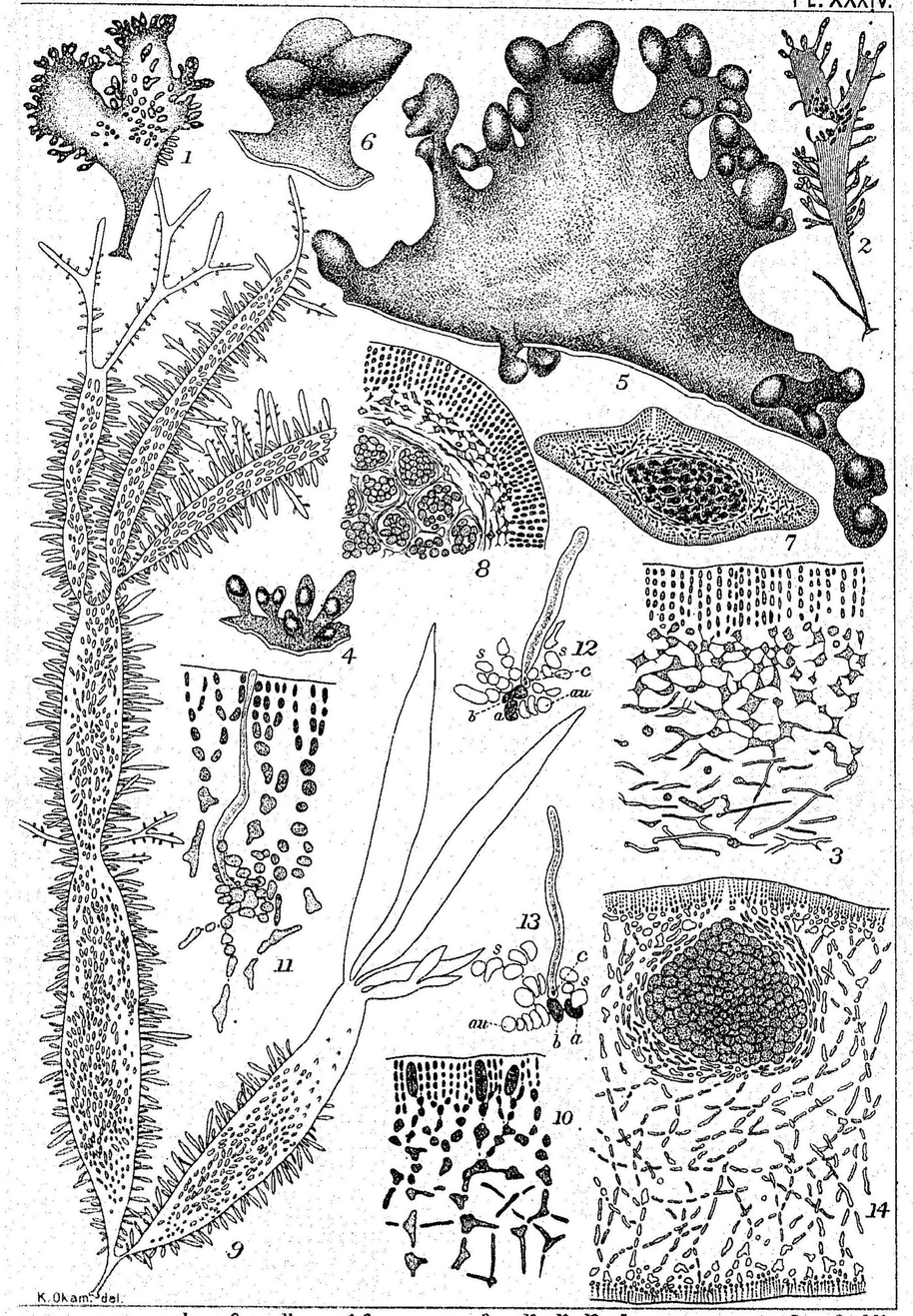
PL. XXXIII, Fig. 9-12. Fig. **9**: broader form of *Gigartina Teedii* (Roth) Lamour. in nat. state and size.—Fig. **10**: cross-section of branch, $\frac{2}{1}^{3}$.—Fig. **11**: portion of a norrower frond bearing cystocarps, $\frac{1}{1}$.—Fig. **12**: portion of the same magd., $\frac{8}{1}$.

Gigartina Teedii (Roth) Lamour.

しきんのり.

第XXXIII圖版, 9-12圖.

體ハ往々球狀塊ヲナシテ叢生シ, 扁平, 線狀ニシテ, 兩緣ヨリ羽狀ニ分岐シ, 密ニ互生並ニ對生シ, 往々叉狀ノ枝モアリ. 枝ハ殆ド直角ニ出デ, 稍左右ニ屈折シ, 長短互ニ混在シ, 短キモノハ齒狀ニシテ緣邊ヨリ出デ, 後伸長シテ單條若クハ概ネ分岐セル枝トナル. 強盛ナル體ニテハ表面ヨリ往々小サキ細キ齒狀ノ副枝ヲ生ズルコトアリ. 體ハ 10-15 cm. ノ高サニ達シ, 枝ノ幅ハ其主ナル部分ニ於テ 1-2 mm. ヨリ 4-5 mm. ニ至リ, 漸次上方ニ細シ, 而シテ體ノ輪廓ハ高サヨリモ幅ノ方廣シ. 囊果ハ半球狀ニシテ小サク, 小サキ刺ノ側部若クハ基部ニ生ズ. 色ハ淡キ暗紅色ニシテ, 綠色ニ變ズ. 質ハ稍軟キ軟骨質ニシテ紙ニ付着スルコト充分ナラズ.



Gigartina pacifica Kjellm. いぼのり. Figs. 1-8.
Grateloupia lancifolia (Harv.) Okam. きようのひも Figs. 9-14.

産地：潮線間ノ岩石上ニアリテ高潮線ニ近ク生ジ，往々沙溜リニアリ．　遠江及ビ相模；横須賀（相州，Savatier）．　嚢果：—晩春-夏季．

分布：大西洋（英國ヨリ Tingin ニ至ル沿岸）；地中海及アドリアチック海；ブラジル．

本種ハ所ニヨリ食料トスル所アリ，又糊料ニ用フ．　予ハ變キニひらすぎのりノ名ヲ命ジタレドモ，既ニしきんのりノ名アルヲ以テ今之ニ改ム．

第XXXIII圖版，9-12圖．　**9**：Gigartina Teedii，しきんのり，ノ幅廣キ體，$\frac{1}{1}$．—**10**：枝ノ橫斷面，$\frac{22}{1}$．—**11**：細キ體ノ一部ニ嚢果ヲ有スルモノ，$\frac{1}{1}$．—**12**：嚢果有スル枝ノ一部，$\frac{8}{1}$．

Gigartina pacifica Kjellm.

Nom. Jap.: *Ibonori.*

PL. XXXIV, Fig. 1-8.

Gigartina pacifica Kjellm. Om. Beringhafv. Algfl. (1889), p. 31, tab. 1, fig. 21-22; De Toni Syll. Alg. IV, p. 217; 岡村，日本藻類名彙 p. 231.

Hab.: On rocks between tide-marks. Hakodate and Otaru (Hokkwaido). Cystocarps:—summar.

PL. XXXIV, Fig. 1-8. Fig. **1**: canaliculated fructified frond of *Gigartina pacifica* Kjellm. viewed from the convex side, $\frac{1}{1}$.—Fig. **2**: another frond, in dried state, $\frac{1}{1}$.—Fig. **3**: portion of the cross-section of frond, $\frac{240}{1}$.—Fig. **4**: fertile papillae produced from the surface of frond, very slightly magd.—Fig. **5**: marginal fructified portion, $\frac{5}{1}$.—

Fig. **6**: papilla bearing two cystocarps, $\frac{5}{1}$.—Fig. **7**: cross-section of cystocarp, $\frac{22}{1}$.—Fig. **8**: portion of the same, magd.

Gigartina pacifica Kjellm.

いぼのり. 岡村稱.

第XXXIV圖版, 1-8 圖.

體ハ扁壓ニシテ溝狀ヲナシ, 2-多叉狀ニシテ多少幅廣キ楔形ヲナシ, 下部細クシテ莖狀ヲナス, 高サ約 5-7 cm. 幅 0.7-20 mm. アリ, 而シテ體ノ緣邊及表面ヨリ突起ヲ生ズ; 突起ハ扁壓, 披針狀又ハ叉狀若クハ稍掌狀ニ分レ, 其頂端下ニ囊果ヲ生ズ. 囊果ハ一個又ハ數個同一ノ突起上ニ生ズ. 色ハ赤黑クシテ瑠璃色ノ閃光ヲ呈ス. 革質—軟骨樣ニシテ乾燥スルトキハ硬クナリ, 紙ニ付着セズ.

產地: 潮線間ノ岩石上ニ生ズ. 函館, 小樽. 囊果:—夏季.
分布: ベーリング海.

本種ハ太西洋北部ニ普通ナル Gigartina mamillosa (Good. et Woodw.) J. Ag. ニ酷似シ, 往々之ト混ゼラレタレドモ, Kjellman 氏ハ其溝狀ニ反ルト突起ノ頂端下ニ囊果ヲ生ズルトノ性質ニヨリテ之ヲ該種ヨリ分テリ; 蓋シ該種ニテハ囊果ハ突起ノ全部ヲ占メ, 突起即囊果ナルノ差アレバナリ.

本邦未ダ經濟上之ヲ利用スルモノアルヲ聞カズト雖モ, 其多產スルモノアラバ宜シク糊料トシテ用フベシ.

第XXXIV圖版, 1-8. **1**: *Gigartina pacifica* Kjellm., いぼのり, ノ囊果ヲ熟シタルモノニシテ溝狀ヲナセル體ヲ其凸面ヨリ見タルモノ, $\frac{1}{1}$.—**2**: 乾燥シタル他ノ標品, $\frac{1}{1}$.—**3**: 體ノ橫斷面ノ一部, $\frac{240}{1}$.

—**4**: 體ノ表面ヨリ實ヲ有スル突起ヲ生ジタルモノ, 少シク廓大.—**5**: 囊果ヲ生ジタル體ノ緣邊, $\frac{5}{1}$.—**6**: 二個ノ囊果ヲ有スル突起, $\frac{5}{1}$.—**7**: 囊果ノ橫斷面, $\frac{22}{1}$.—**8**: 同上ノ一部, 廓大.

Grateloupia lancifolia (Harv.) Okam.

Nom. Jap.: *Kyo-no-himo.*

PL. XXXIV, Fig. 9-14.

Grateloupia lancifolia (Harv.) Okam. Contrib. Knowl. Mar. Alg. Jap. III, p. 6 (Bot. Mag. Tokyo, Vol. XIII, 1899, no 143, p. 7); De Toni Syll. Alg. IV, p. 1568; Okam. Alg. Jap. Exsic. (日本海藻標品) Fasc. I, no. 30; 岡村, 日本藻類名彙 p. 88,—*Gigartina lancifolia* Harv. Char. New Alg. in Proceed. Amer. Acad. Vol. IV, 1859, p. 331, no. 30; J. Ag. Epicr. p. 204 (nomen); Sur. Alg. Jap. I, p. 83, t. 9; De Toni Phyc. Jap. nov. p. 24, no. 34; Id. Syll. Alg. IV, p. 215. —*Grateloupia horrida* Okam. Contrib. Phycol. Jap. p. 1, Pl. V, fig. I-II in Bot. Mag., Tokyo, Vol. VII, 1893, No. 75.

"Root a small disc. Stem simple or sometimes branched, compressed or almost cylindrical, short, 0.5-1 cm. long, soon passing into the oval or subcuneate base of the frond. Frond tufted or solitary, flat, lanceolate, slightly thickened at the margin, 1.5-6 cm. broad, rarely simple, usually constricted at long intervals so as to form something like nodes, branches arising proliferously from the nodes or apex. Apex of frond generally dissolved into two, three or more frondlets or branches, rarely simple and subulate. Branches either simple and lanceolated or attenuated above, or ramifying dichotomously become linear. Internodes sublanceolate or almost oval in some small specimens. Smaller prolifications constricted at the base,

densely arising from the margin and surface of the frond except younger portions. They are mostly short and lanceolate; some of them at the margin become either longer and linear branching once or twice dichotomously or pinnate by lateral proliferations. Cystocarps abundant, mostly collected in the smaller proliferations. Tetraspores dispersed over the surface of the frond and in the proliferations. Color dark purplish red, changing to brownish or pale yellowish. Substance cartilaginous and lubricous. The plant does not adhere to paper in drying except the soft younger portions free from proliferations." —Okam. Contr. Phyc. Jap. p. 1.

Fronds attain the length of 15-30 cm, some growing even to 60 cm. When young they are entirely free from proliferations.

Hab.: On rocks between tide-marks. Provs. Satsuma, Chikuzen, Totomi, Sagami, Idzumo, Noto, Yechi-go; Hakodate.

The near ally of the present species is *Grateloupia filicina*.

PL. XXXIV, Fig. 9-14. Fig. **9**: fructified frond of *Grateloupia lancifolia* (Harv.) Okam., $\frac{1}{1}$.—Fig. **10**: portion of the cross-section of frond bearing tetrasporangia, $\frac{220}{1}$.—Fig. **11**: procarp *in situ*, $\frac{600}{1}$.—Fig. **12-13**: procarp; *a,b,c*, cells of the carpogonial branch; *au* and *s,s*, sterile cell branches, $\frac{600}{1}$.—Fig. **14**: cystocarp, $\frac{230}{1}$.

Grateloupia C. Ag. 1822.

むかでのり屬.

GRATELOUPIACEAE. むかでのり科.

體ハ扁壓又ハ扁平ニシテ葉狀,又狀又ハ羽狀ニ分岐シ,又往々枝ヲ副出シ,稀ニ表面ヨリ分岐ス,而シテ明ニ絲組織ヨリ成リ,多肉ナル粘滑樣軟骨質ヨリ成ル. 髓部ハ細クシテ網狀ニ錯綜セル絲ヨリ成リ,又別ニ細キ根樣絲ノ之ニ付隨スルア

リ,而シテ往々稍弛緩スルコトアリ;內皮部ハ可ナリ幅廣ク,體ノ內部ノ方ニ稍弛緩シ,漸次髓層ト成リ;外皮部ハ厚クシテ屢々叉狀ニ連レル念珠狀絲ヨリ成リ,此絲表面ニ直角ニ立ツ.——四分胞子囊ハ體ノ表面ニ散布ス. 囊果ハ體ノ上部ニ不規則ナル群ヲナシテ散在シ,小ニシテ,全ク體內ニ存ス;仁ノ周圍ヲ被包スル絲組織ハ多少充分ニ形成セラル.

囊果ノ形成セラルヽ方法下ノ如シ. 助細胞ハ短キ關節ニテ成レル枝ニ介生的ニ生ジ,此枝ハ周圍ノモノトハ少シク特殊ナル如ク見ユルモノニシテ,其側面ニ枝ヲ分ツ;此枝ハ其側ニ生ジタル枝ト共ニ屈曲集蔟シテ一個ノ卵形若クハ壜狀ノ塊ヲナシ,其中心部ニ助細胞ヲ存ス. 胎原列ハ短キ關節ヨリ成リテ側面ニ枝ヲ分チ,助細胞枝ノ團塊ト全ク同樣ノ塊狀ニ屈曲集蔟シ,其中央ニ胎原列ヲ存シ,列ノ上部ニ胎心細胞ヲ戴ク. 胎原列及ビ助細胞枝ハ多數ニ形成セラレ,助細胞枝ハ殊ニ著シク多クシテ,實ヲ生ズベキ部分ノ皮層ノ絲ノ基部ニ形成セラル(多クハ漸々ニ形成セラルヽナリ). 受胎シタル胎心細胞ヨリハ一條乃至數條ノ「オーブラステマ」絲ヲ發出シテ助細胞ニ達シ,通常多數ノ助細胞ト漸次互ニ癒合ス. 斯ク癒合シタル助細胞ハ體ノ內部ノ方ニ成胞絲ヲ生ジ,之ト同時ニ囊ニ助細胞枝ノ團塊ヲ圍繞シタル絲ハ各方面ニ向テ互ニ弛緩シテ以テ將來仁即チ胞子ノ團塊ヲ容ルベキ場所即チ果腔ヲ形成ス;助細胞ハ依然トシテ果腔ノ內底ニ存スルナリ. 此助細胞ヨリ上方ニ一個ノ太キ突起ヲ生ズ(往々一個若クハ數個ノ周圍ノ細胞ト癒合シタル後ニ於テス),而シテ其突起ノ上端ハ往々仁ノ中心細胞トシテ特ニ關節セラルヽニ至ル;茲ニ於テ,此中心細胞即チ助細胞ノ突起ヨリ多數ノ枝ヲ束狀ニ生ズ;此等ノ束狀枝ハ胞子ヲ形成スルモノニシテ下部ヨリ上方ニ順次ニ形成セラレ,互ニ區別セラルベキ團塊即チ成胞裂絲

densely arising from the margin and surface of the frond except younger portions. They are mostly short and lanceolate; some of them at the margin become either longer and linear branching once or twice dichotomously or pinnate by lateral proliferations. Cystocarps abundant, mostly collected in the smaller proliferations. Tetraspores dispersed over the surface of the frond and in the proliferations. Color dark purplish red, changing to brownish or pale yellowish. Substance cartilaginous and lubricous. The plant does not adhere to paper in drying except the soft younger portions free from proliferations." —Okam. Contr. Phyc. Jap. p. 1.

Fronds attain the length of 15-30 cm, some growing even to 60 cm. When young they are entirely free from proliferations.

Hab.: On rocks between tide-marks. Provs. Satsuma, Chikuzen, Totomi, Sagami, Idzumo, Noto, Yechi-go; Hakodate.

The near ally of the present species is *Grateloupia filicina*.

PL. XXXIV, Fig. 9-14. Fig. **9**: fructified frond of *Grateloupia lancifolia* (Harv.) Okam., $\frac{1}{1}$.—Fig. **10**: portion of the cross-section of frond bearing tetrasporangia, $\frac{220}{1}$.—Fig. **11**: procarp *in situ*, $\frac{600}{1}$.—Fig. **12-13**: procarp; *a,b,c*, cells of the carpogonial branch; *au* and *s,s*, sterile cell branches, $\frac{600}{1}$.—Fig. **14**: cystocarp, $\frac{230}{1}$.

Grateloupia C. Ag. 1822.

むかでのり屬.

GRATELOUPIACEAE. むかでのり科.

體ハ扁壓又ハ扁平ニシテ葉狀,叉狀又ハ羽狀ニ分岐シ,又往々枝ヲ副出シ,稀ニ表面ヨリ分岐ス,而シテ明ニ絲組織ヨリ成リ,多肉ナル粘滑樣軟骨質ヨリ成ル. 髓部ハ細クシテ網狀ニ錯綜セル絲ヨリ成リ,又別ニ細キ根樣絲ノ之ニ付隨スルア

リ,而シテ往々稍弛緩スルコトアリ;內皮部ハ可ナリ幅廣ク,體ノ內部ノ方ニ稍弛緩シ,漸次髓層ト成リ;外皮部ハ厚クシテ屢々叉狀ニ連レル念珠狀絲ヨリ成リ,此絲表面ニ直角ニ立ツ.——四分胞子嚢ハ體ノ表面ニ散布ス. 嚢果ハ體ノ上部ニ不規則ナル群ヲナシテ散在シ,小ニシテ,全ク體內ニ存ス;仁ノ周圍ヲ被包スル絲組織ハ多少充分ニ形成セラル.

嚢果ノ形成セラルヽ方法下ノ如シ. 助細胞ハ短キ關節ニテ成レル枝ニ介生的ニ生ジ,此枝ハ周圍ノモノトハ少シク特殊ナル如ク見ユルモノニシテ,其側面ニ枝ヲ分ツ;此枝ハ其側ニ生ジタル枝ト共ニ屈曲集蔟シテ一個ノ卵形若クハ壜狀ノ塊ヲナシ,其中心部ニ助細胞ヲ存ス. 胎原列ハ短キ關節ヨリ成リテ側面ニ枝ヲ分チ,助細胞枝ノ團塊ト全ク同樣ノ塊狀ニ屈曲集蔟シ,其中央ニ胎原列ヲ存シ,列ノ上部ニ胎心細胞ヲ戴ク. 胎原列及ビ助細胞枝ハ多數ニ形成セラレ,助細胞枝ハ殊ニ著シク多クシテ,實ヲ生ズベキ部分ノ皮層ノ絲ノ基部ニ形成セラル(多クハ漸々ニ形成セラルヽナリ). 受胎シタル胎心細胞ヨリハ一條乃至數條ノ「オーブラステマ」絲ヲ發出シテ助細胞ニ達シ,通常多數ノ助細胞ト漸次互ニ癒合ス. 斯ク癒合シタル助細胞ハ體ノ內部ノ方ニ成胞絲ヲ生ジ,之ト同時ニ嚢ニ助細胞枝ノ團塊ヲ圍繞シタル絲ハ各方面ニ向テ互ニ弛緩シテ以テ將來仁即チ胞子ノ團塊ヲ容ルベキ場所即チ果腔ヲ形成ス;助細胞ハ依然トシテ果腔ノ內底ニ存スルナリ. 此助細胞ヨリ上方ニ一個ノ太キ突起ヲ生ズ(往々一個若クハ數個ノ周圍ノ細胞ト癒合シタル後ニ於テス),而シテ其突起ノ上端ハ往々仁ノ中心細胞トシテ特ニ關節セラルヽニ至ル;茲ニ於テ,此中心細胞即チ助細胞ノ突起ヨリ多數ノ枝ヲ束狀ニ生ズ;此等ノ束狀枝ハ胞子ヲ形成スルモノニシテ下部ヨリ上方ニ順次ニ形成セラレ,互ニ區別セラルベキ團塊即チ成胞裂絲

ヲ成シ,其各細胞皆悉ク胞子トナル.——嚢果ハ多クハ小ニシテ皮層ノ下ニ形成セラレ,其部ノ皮層ニ一條ノ細キ孔ヲ開キテ開口シ,其部ハ少シク隆起ス;果腔ハ助細胞ノ周圍ヲ圍繞セル絲組織ヨリ形成セラレタル特殊ノ網狀ヲナセル組織ニテ被包セラル. 仁ハ此果腔ノ底ニ立チ,球狀—腎臟狀ニシテ多少數塊ニ分レ,多少大ナル仁柄細胞即チ中心細胞ヲ存ス;成胞裂絲即チ小仁ハ互ニ密集ス.

諸所ノ暖キ海ニ産シ30-40種アリテ,極メテ變化シ易キ形狀ノモノ多シ. 模範トスベキモノハ Gr. filicina (Wulfen) C. Ag. (むかでのり)ニシテ,地中海及ビ大西洋暖部ニ産シ,喜望峰ヨリ太平洋ニ至リ,本邦ニモ産ス.——本屬ハ現今數個ノ部類ニ分クルベキ種類ヲ抱括スレドモ,此ハ將來ニハ多分夫々ノ別屬トセラルベキナリ;尚又,本屬ハ他ノ之ニ類スル諸屬ト極メテ不充分ナル性質ニテ區別セラルヽノミ.

屬ノ名ハ佛國ノ海藻學者 J. P. Grateloup 氏ノ名譽ノ爲ニ設ケタルナリ.

Grateloupia lancifolia (Harv.) Okam.

きようのひも.

第XXXIV圖版,9-14圖.

根ハ小盤狀ナリ. 莖ハ單條又ハ稍分岐シ,扁圓若クハ圓柱狀ニシテ,短ク,0.5-1 cm. 長ク,直ニ卵形乃至稍楔形ヲナセル體ノ基部ニ擴ガル. 體ハ叢生シ或ハ孤立シ,扁平,披針狀ニシテ緣邊少シク厚ク,1.5-6 cm. 濶ク,稀ニ單條,通常長距離ニ於テ結節點トモ稱スベキクビレヲ生ジ,此クビレ若クハ體ノ頂端ヨリ數多ノ枝ヲ副出ス. 體ノ頂端ハ概ネ2-3乃至夫以上ノ枝ニ分レ,罕ニ分レズシテ尖銳ナリ. 枝ハ單條ニシテ披針

ヲ成シ,其各細胞皆悉ク胞子トナル.——嚢果ハ多クハ小ニシテ皮層ノ下ニ形成セラレ,其部ノ皮層ニ一條ノ細キ孔ヲ開キテ開口シ,其部ハ少シク隆起ス;果腔ハ助細胞ノ周圍ヲ圍繞セル絲組織ヨリ形成セラレタル特殊ノ網狀ヲナセル組織ニテ被包セラル. 仁ハ此果腔ノ底ニ立チ,球狀—腎臟狀ニシテ多少數塊ニ分レ,多少大ナル仁柄細胞即チ中心細胞ヲ存ス;成胞裂絲即チ小仁ハ互ニ密集ス.

諸所ノ暖キ海ニ産シ30-40種アリテ,極メテ變化シ易キ形狀ノモノ多シ. 模範トスベキモノハ Gr. filicina (Wulfen) C. Ag. (むかでのり)ニシテ,地中海及ビ大西洋暖部ニ産シ,喜望峰ヨリ太平洋ニ至リ,本邦ニモ産ス.——本屬ハ現今數個ノ部類ニ分タルベキ種類ヲ抱括スレドモ,此ハ將來ニハ多分夫々ノ別屬トセラルベキナリ;尚又,本屬ハ他ノ之ニ類スル諸屬ト極メテ不充分ナル性質ニテ區別セラルヽノミ.

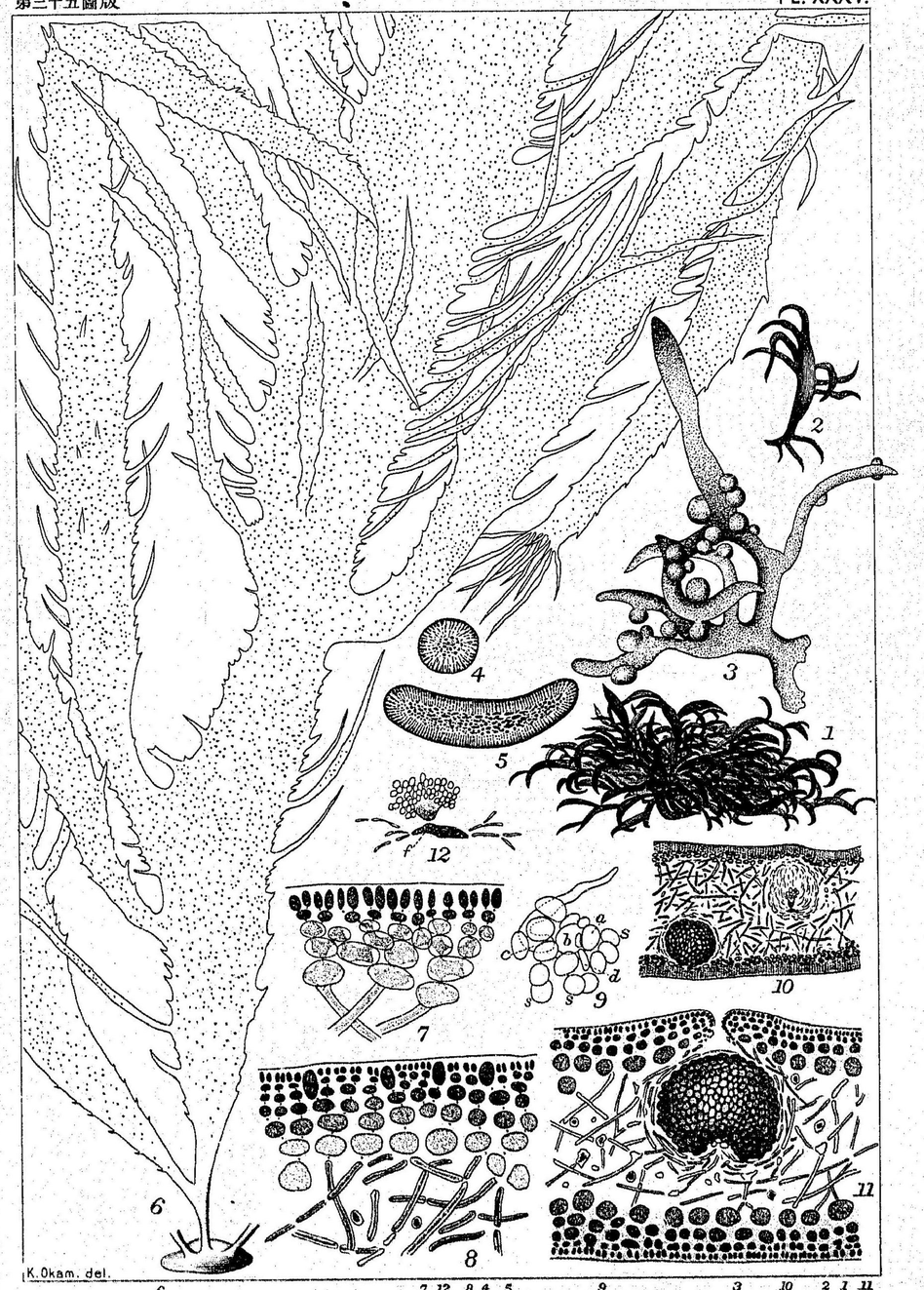
屬ノ名ハ佛國ノ海藻學者 J. P. Grateloup 氏ノ名譽ノ爲ニ設ケタルナリ.

Grateloupia lancifolia (Harv.) Okam.

きようのひも.

第XXXIV圖版,9-14圖.

根ハ小盤狀ナリ. 莖ハ單條又ハ稍分岐シ,扁圓若クハ圓柱狀ニシテ,短ク,0.5-1 cm. 長ク,直ニ卵形乃至稍楔形ヲナセル體ノ基部ニ擴ガル. 體ハ叢生シ或ハ孤立シ,扁平,披針狀ニシテ緣邊少シク厚ク,1.5-6 cm. 濶ク,稀ニ單條,通常長距離ニ於テ結節點トモ稱スベキクビレヲ生ジ,此クビレ若クハ體ノ頂端ヨリ數多ノ枝ヲ副出ス. 體ノ頂端ハ概ネ2-3乃至夫以上ノ枝ニ分レ,罕ニ分レズシテ尖銳ナリ. 枝ハ單條ニシテ披針



Gigartina intermedia Sur. かいのり. Figs. 1-5.
Halymenia acuminata (Holm) J. Ag. おほむかでのり. Figs. 6-12.

狀，或ハ上部ニ細ク，或ハ叉狀ニ分岐シテ線狀ヲナス．　節間部ハ稍披針狀又ハ或小サキ體ニアリテハ略ボ卵形ヲナスコトアリ．　體ノ兩面及ビ緣邊ヨリ密ニ小サキ副枝ヲ生ズ；副枝ハ基部クビレ，老成セル體ノ全面ヨリ出レドモ，幼キ部分ヨリハ出デズ．　副枝ハ概ネ短クシテ披針狀ナレドモ，其緣邊ヨリ出ルモノハ時トシテハ長クシテ線狀トナリ，一二回叉狀ニ分岐シ，又ハ兩側ヨリ羽狀ニ分岐ス．——囊果ハ小サキ副枝ニ多數集リ生ズ．　四分胞子ハ體及ビ副枝ノ表面ニ散在ス．　色ハ暗紅色ニシテ褐色又ハ淡黃褐色ニ變ズ．　質軟骨樣ニシテ柔滑ナリ．　體ハ小副枝ナキ幼キ部分ノ外ハ紙ニ付着セズ．　體ノ長サ 15-30 cm. ニシテ往々 60 cm. ニ達スルモノアリ；其幼キ時ハ全ク副枝ヲ生ゼザルモノトス．

産地：潮線間ノ岩石ニ生ズ．　薩摩，筑前，遠江，相模，出雲，能登，越後，函館．　果實:—夏季．

本種ハ極メテ Grateloupia filicina, むかでのり，ト近キ類緣ヲ有ス．　本種ハ古名きやうのひもト稱シ古ヨリ食用ニ供セリ；名ハ經文ノ紐ニ類スルニテモヤアラン；ひものり，ひぼのり，かはぎし，みのぢのり（鹿兒島縣出品ノ標品ニ此名アリタルヨリ予ハ之ヲ採レリ），ちやちやぶり（越後），むかでな（筑前），はさつぺい（山口縣）等ノ名アリ；能登，越前等ノ兒女此藻ノ軟キモノヲ取リ，之ヲはさつぺいト稱シ，吹キ脹ラシテ鬼灯ノ如ク鳴シ以テ娛トストト云フ．

第XXXIV圖版，9-14圖．　**9**：Grateloupia lancifolia (Harv.) Okam., きやうのひもノ果實アル體，$\frac{1}{1}$.—**10**：四分胞子ヲ有スル體ノ橫斷面ノ一部，$\frac{220}{1}$.—**11**：胎原列ヲ其位置ノマヽニテ示シタルモノ，$\frac{600}{1}$.—**12-13**：胎原列；*a*, *b*, *c*, 胎原列ノ細胞；*au*, *s*, *s*, 中性細胞列，$\frac{600}{1}$.—**14**：囊果，$\frac{230}{1}$.

Gigartina intermedia Sur.

Nom. Jap.: *Kai-nori.*

PL. XXXV, Fig. 1-5.

Gigartina intermedia Suring. Alg. Jap. p. 30, t. XVII, B; J. Ag. Epicr. p. 204 (nomen); De Toni Syll. Alg. IV. p. 199; Okam. Alg. Jap. Exsic. (日本海藻標品), Fasc. II, no. 58; 岡村, 日本藻類名彙, p. 26.

Fronds forming low, pulvinate, densely overlapping masses, widely stretched over rocks, firmly attaching to substratum by forming holdfasts at the places where branches come in contact with it. Branches rising from repenting segments, compressed, very irregularly branched in subpinnate manner with strongly recurved, patent and furrowed branches, which are often dilated into sublanceolate segments ending in a sharp point. Branches adhere to each other and to substratum by the formation of attachments. Cystocarps almost globular, sessile, often a few aggregating together along the margin of frond. Colour purplish red with bluish iridescence. Substance strongly cartilaginous, and the plant imperfectly adheres to paper in drying.

Hab.: On rocks at high tide. Provs. Tosa, Shima, Sagami, and Boshyu; Hakodate. Fruits:—early summar.

Plants closely related to *Gigartina tenella* which has the structure of frond more dense than in the present species, as it is seen from the comparison of fig. 4-5 of Pl. XXXV and fig. 4-6 of Pl. XXXIII.

PL. XXXV, Fig. 1-5. Fig. **1**: fronds of *Gigartina intermedia* Sur. in nat. state and size.—Fig. **2**: portion of frond detached, $\frac{1}{1}$.—Fig. **3**: portion of frond bearing cystocarps, $\frac{3}{1}$.—Fig. **4**: cross-section of lower cylindrical portion of frond, $\frac{12}{1}$.—Fig. **5**: cross-section of compressed portion of frond, $\frac{12}{1}$.

Gigartina intermedia Sur.

かいのり.

第XXXIV圖版, 1-5圖.

體ハ低キ枕狀ニシテ密ニ重疊セル塊ヲナシ, 廣ク不規則ニ岩石上ニ蔓延シ, 地物ト接スル所ニ付着器ヲ形成シテ固ク密着ス; 而シテ匍匐スル部分ヨリ直立スル枝ハ扁壓ニシテ, 極メテ不規則ニ稍羽狀ニ分岐シ, 強ク反曲シ, 廣開シ, 溝狀ヲナス, 又往々披針狀ニ擴ガリ, 尖銳ニ終ル. 枝ハ互ニ癒着シ, 又付着器ヲ作リテ地物ニ付着ス. 嚢果ハ略ボ球狀ニシテ, 無柄, 往々, 緣邊ニ沿フテ數個集リ生ズ. 色血紅色ニシテ, 瑠璃色ノ閃光ヲ呈ス. 質強キ軟骨質ニシテ乾燥スルトキハ紙ニ付着セズ.

産地: 高潮線ノ岩石上ニ生ズ. 土佐, 志摩, 相模, 安房, 函館. 嚢果:—初夏.

本種ハ Gigartina tenella, すきのり, ト最モ近キ類緣ヲ有シ, 體ノ構造ハ夫ヨリモ稍緻ク構成セラルヽコト第XXXV圖版, 4-5圖ト第XXXIII圖版, 4-6圖トヲ比較シテ知ルベシ.

本種ハ採ツテ糊料ニ用フベシ; 房州白濱邊ニテハしほくそ又ハはがちのてト稱ス; はがちトハ同地ノ方言ニ百足ヲ云フ, 即チ百足ノ鉤狀ヲナセル爪ニ類スル形狀アルヲ以テナリ.

第XXXV圖版, 1-5圖. **1**: Gigartina intermedia Sur., かいのり, ノ自然ノ狀態, $\frac{1}{1}$.—**2**: 體ノ一部, $\frac{1}{1}$—**3**: 嚢果ヲ有スル體ノ一部, $\frac{3}{1}$.—**4**: 體ノ下部圓柱狀ヲナセル部分ノ橫斷面, $\frac{12}{1}$.—**5**: 體ノ扁壓セル部分ノ橫斷面, $\frac{12}{1}$.

Halymenia acuminata (Holm.) J. Ag.

Nom. Jap.: *Ō-mukade-nori.*

PL. XXXV, Fig. 6-12.

Halymenia acuminata (Holm.) J. Ag. Sp. Alg. Vol. III, part 4, 1901, p. 130.—*Grateloupia acuminata* Holm. On Mar. Alg. fr. Japan, 1895 (Linn. Soc. Bot. Vol. XXXI) p. 254, t. X, f. 2a-c; De Toni Syll. Alg. IV, p. 1559; Okam. Alg. Jap. Exsic. (日本海藻標品) Fas. I, no. 31; 岡村, 日本藻類名彙 p. 89.

Hab.: Probably in low tide. Enoshima (Prov. Sagami).
Fruits :—spring.

Plant attains the length of 45-60 cm. with the breadth of 4-6 cm. In robust forms, branches having similar shape as the remaining densely proliferate from both surfaces of the main segment. Plant firmly adheres to paper in drying.

The present plant which has been suspected by Holmes to belong to *Halymenia* from the structure of frond has been afterward considered by J. Agardh to be placed under that genus in the section *Acanthymeniae* J. Ag. *l. c.*

PL. XXXV, Fig. 6-12. Fig. **6**: fructified frond of *Halymenia acuminata* (Holm.) J. Ag., $\frac{1}{1}$.—Fig. **7**: cortical portion of frond, showing the structure, $\frac{840}{1}$.—Fig. **8**: portion of the cross-section of frond bearing tetrasporangia, $\frac{240}{1}$.—Fig. **9**: *a,b,c*, cells of procarpial branch; *s,s*, sterile-cell branches; *d*, carrying cell, $\frac{600}{1}$.—Fig. **10**: cross-section of frond bearing cystocarps, $\frac{54}{1}$.—Fig. **11**: cystocarp, $\frac{85}{1}$.—Fig. **12**: central cell cut off from fused cell, *f*, $\frac{220}{1}$.

Halymenia (C. Agardh 1817.) J. Ag. 1842.

ハリメニア属.

GRATELOUPIACEAE. むかでのり科.

體ハ圓柱狀又ハ角張リ,扁壓又ハ葉狀ニシテ扁ク,種々ニ叉狀又ハ兩側ヨリ分岐シ,一部ハ又副出シテ分岐ス;體ノ內部ハ多少弛緩シ,概テ粘質ニシテ軟ク,絲ト細胞トニテ成ル:髓層ハ絲狀細胞ノ網狀ヲナセルモノヨリ成リ,細キ髓絲ヲ存シ,同樣ノ根樣絲之ニ付隨シ,多クハ可ナリ緩ク構成セラル;皮層ハ概テ可ナリ薄ク,外方ニハ小サキ細胞ヨリ成リテ甚ダ密ニ結合シ,內方ニハ稍大ナル細胞ヨリ成リテ稍緩ク,所々ニ散布セル如キ稍大ナル細胞ニ依テ髓部ト連絡ス;此細胞ハ多少網狀ヲナス.——四分胞子嚢ハ散在シ,皮層ノ裡ニ埋リ,十字樣ニ分裂ス. 助細胞塊ハ皮層ノ內部ニ生ジ,其濶キ下部ヲ以テ髓層ニ接ス, 嚢果ノ形成スル方法ハ Grateloupia 屬ノ下ニ記シタルモノニ同ジ. 嚢果ハ散在シ,可ナリ小ニシテ,多少全ク埋在シ,多少髓層ニ近ク存ス. 仁ノ周圍ヲ包メル組織ハ多少明ニ形成セラル.

約 10-20 種アリテ諸所ノ暖キ海ニ產ス. 模範トスベキ種ハ Halymenia floresia (Clementi) C. Ag. ニシテ廣ク散在ス;即チ地中海及アドリアチック海,暖部太西洋,歐,弗,米ノ沿岸,紅海;ニウフホルランドノ沿岸等ニ產ス. 本邦ニハ專ラ臺灣,琉球等ニ印度洋邊ノモノヲ產ス.——本屬ニハ從來多數ノ種類アレドモ,極メテ僅ニ模範種ト類似スル如キモノ少ナカラズ.

屬ノ名ハ Hals 又ハ Halos, (海) ト hymen (膜) トヨリ成ル, 即チ膜狀ノ體ニ採レルモノナリ.

Halymenia acuminata (Holm.) J. Ag.

おはむかでのり. 岡村稱.

第XXXV圖版, 6-12圖.

體ハ扁平葉狀ニシテ, バンド狀ヲナシ, 下部楔形ニ終リ, 短キ扁圓ノ莖ヲ以テ圓盤狀根ヨリ叢生シ, 體ノ下部ニ於テ數個ノ主枝ニ分ルヽアリ, 又ハ單條ナルアリ, 而シテ兩緣ヨリ廣キ線狀ノ枝ヲ生ジ, 此枝又其兩緣ヨリ更ニ細小ナル枝ヲ出シ, 各部ノ緣邊ハ小齒狀ヲナス; 此齒狀片ハ後伸長シテ枝トナルモノナリ; 斯クテ二三回羽狀ニ分岐ス; 又强盛ナルモノニアリテハ主ナル部分ノ兩面ヨリ他ノ部ト同樣ノ枝ヲ副出スルコトアリ; 枝ハ皆上端ニ細シ. 體ノ長サ45 cm. ヨリ60 cm. ニ達シ, 幅ハ廣キ所ニテ4-6 cm. アリ. 囊果ハ小ニシテ密ニ體ノ兩面ニ散在ス. 四分胞子ハ體ノ表面ニ散布シ皮層中ニアリ. 色ハ紅色; 質ハ膜質ニシテ柔滑, 紙ニ密着ス.

產地: 多分ハ低潮線付近ニ生ズルナルベシ. 相州江ノ島. 果實:—春季.

本種ハ元トHolmes氏ガJ. Agardh氏ノ說ニ從ヒGrateloupia acuminataトシタルモノナレドモ, 後J. Agardh氏ハ其Halymenia ニ屬スベキモノナルコトヲ論ゼリ. Halymenia屬ハ皮層ノ構造Grateloupia屬ト異ニシテ, 皮層ハ內部大ナル細胞ヨリ成リ, 漸次外方ニ小ニシテ, 密ニ結合シ, 以テ薄キ外皮ヲナスニヨリテ之ト區別ス; Grateloupiaノモノハ小サキ念珠狀ニ連ナレル細胞ノ相集リテ絲狀ヲナセルモノヨリ成ル.

第XXXV圖版, 6-12圖. **6**: 囊果ヲ有スルHalymenia acuminata (Holm.) J. Ag., おはむかでのり, $\frac{1}{1}$.—**7**: 皮層ノ構造ヲ示セル體ノ

橫斷面, $\frac{340}{1}$.—**8**: 四分胞子ヲ存スル體ノ橫斷面ノ一部, $\frac{240}{1}$.—**9**: *a, b, c*, 胎原列ノ細胞; *s, s*, 囊果形成ニ與カラザル細胞列ノ枝; *d*, 胎原列及中性細胞ヲ支持セル細胞, $\frac{600}{1}$.—**10**: 囊果ヲ有スル體ノ橫斷面, $\frac{54}{1}$.—**11**: 囊果, $\frac{85}{1}$.—**12**: 助細胞ノ癒合シタル細胞, *f*, ヨリ中心細胞即チ仁柄細胞ヲ分裂シタルモノ, $\frac{220}{1}$.

Addenda.

Put the following lines above the line " **Enantiocladia** Falkenberg 1889 *" on p. 43:—*

PL. IX, Fig. 1. Fig. **1**: sterile frond of *Enantiocladia latiuscula* (Harv.) Okam. in nat. size.

PL. X. Fig. 1-17. Fig. **1**: portion of frond bearing cystocarps, $\frac{1}{1}$.—Fig. **2**: cystocarp, $\frac{22}{1}$.—Fig. **3**: vertical section of a cystocarp, $\frac{22}{1}$.—Fig. **4**: ramulus bearing procarps and unfertilized ones which appear like nipple-shaped ramelli, $\frac{91}{1}$.—Fig. **5**: apical portion of the same showing young procarps; *e, e*, margin of the ramulus, $\frac{175}{1}$.—Fig. **6**: procarp with a trichogyne, $\frac{220}{1}$.—Fig. **7**: ventral view of a branch bearing fertile ramelli, $\frac{54}{1}$.—Fig. **8**: portion of frond bearing stichidia, $\frac{1}{1}$.—Fig. **9-10**: ventral view of branches bearing stichidia-like ramelli, $\frac{12}{1}$.—Fig. **11**: stichidium viewed from the lateral side showing cover-cells, $\frac{91}{1}$.—Fig. **12**: young stichidium carrying "hair-leaves" along its dorsal median line, $\frac{220}{1}$.—Fig. **13**: cross-section of a stichidium with the ventral-side above; *a*, the axial cell; *b, b*, pericentral cells bearing tetrasporangium on each of them; *c, c*, cover-cells; $\frac{220}{1}$.—Fig. **14**: cross-section of a branch; *the upper*, the ventral and *the lower*, the dorsal sides, $\frac{22}{1}$.—Fig. **15**: another cross-section of a branch with the ventral side above; *a*, axial cell; $\frac{220}{1}$.—Fig. **16**: longitudinal section of a branch cut parallel to the surface of frond, $\frac{22}{1}$.—Fig. **17**: longitudinal section of a branch cut perpendicular to the surface, $\frac{50}{1}$.

新番地 牛込新小川町二丁目四番地 岡村金太郎

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品　第I-II帙　No. 1-100.

FASCICULUS I-II. No. 1-100.

Price (exclusive of postage) of every Fasciculus :—30mk. = 30 shill. = 37.5 fr. = $7,50.

Subscribers to be addressed to the auther: No. 4, Ni-chomé, Shin-Ogawa-machi, Ushigomé, Tokyo.

Foreign Agent: **Theodor Oswald Weigel,** Leipzig, Königsstr. 1, Deutschland

各帙：金拾弐圓五十錢（外＝郵送料）.

岡村金太郎：—東京牛込新小川町二丁目四番地（口座10936）.

動物標本社：—東京神田五軒丁.

NOTICE.

Price (inclusive of postage) of the ICONES which contains 5 plates in every number is 3.50 MK. for abroad.

Remittances from abroad to be made by Postal Money Order, payable to

K. Okamura, No. 4, Ni-chomé, Shin-Ogawamachi, Ushigomé, Tokyo.

Z. P. Maruya & Co., 14-16, Nihonbashi Tōri Sanchōme, Tokyo.

Foreign Agent: **Theodor Oswald Weigel,** Leipzig, Königsstrasse 1, Deutschland.

定價：　各集圖版五枚ニ就キ壹部金壹圓（税ニ外）

明治四十一年六月十六日發行
明治四十一年六月十九日印刷

不許複製

著作者兼發行者　岡村金太郎　東京牛込區新小川町二丁目四番地　振替貯金口座壹〇九參六
印刷者　中村彌助　東京市京橋區日吉町十番地
印刷所　近藤商店活版部　東京市京橋區日吉町十番地
發賣所　丸善株式會社　東京市日本橋區通三丁目　大坂市心齋橋筋博勞町西入丁目　振替貯金口座（東京五番大坂七四番）

日本藻類圖譜

第一卷第八集

理學博士　岡村金太郎著

ICONES OF JAPANESE ALGÆ.

Vol. I. No. VIII.

BY

K. Okamura *Rigakuhakushi.*

Contents of No. VIII. (Pl. XXXVI—XL.)

Caloglossa Leprieurii (Mont.) J. Ag.　あやぎぬ
Caloglossa ogasawaraensis Okam.　ほそあやぎぬさ
Desmarestia tabacoides Okam. n. sp.　たばこぐさわ
Catenella Opuntia (Good. et Woodw.) Grev.　いそもくさはさ
Anadyomene Wrightii Harv.　うきおりさ
Struvea tenuis Zanard.　あみ
Struvea delicatula Kuetz.　あさいのめあみはさ
Dictyosphaeria favulosa (Mert. ?) Decsne.　きつかうぐ

Published

by

THE AUTHOR.

July, 1908.

Tokyo.

明治 41 8 1 内交

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品　第二帙

FASCICULUS II.

51. Porphyra suborbiculata Kjellm.
52. Batrachospermum moniliforme Roth.
53. Batrachospermum virgatum (Kuetz.) Sirod.
54. Batrachospermum Gallaei Sirod.
55. Yatabella hirsuta Okam.
56. Endocladia complanata Harv.
57. Gigartina Teedii (Roth) Lamour.
58. Gigartina intermedia Suring.
59. Eucheuma spinosum (L.) J. Ag.
60. Ceratodictyon spongiosum Zanard.
61. Gracilaria confervoides (L.) Grev.
62. Hypnea seticulosa J. Ag.
63. Hypnea Saidana Holmes.
64. Gastroclonium ovale (Huds.) Kuetz.
65. Erythrocolon Muelleri (Sond.) J. Ag.
66. Nitophyllum uncinatum (Turn.) J. Ag.
67. Caloglossa Leprieurii (Mont.) J. Ag. Var. continua Okam. Nov. Var.
68. Caloglossa ogasawaraensis Okam.
69. Acrocystis nana Zanard.
70. Polysiphonia fragilis Suring.
71. Pterosiphonia pennata (Roth) Fkbg.
72. Symphyocladia Marchantioides (Harv.) Fkbg.
73. Rhodomela Larix (Turn.) Ag.
74. Herposiphonia fissidentoides (Holmes) Okam.
75. Heterosiphonia pulchra (Okam.) Fkbg.
76. Ptilota pectinata (Gunn.) Kjellm. f. typica Kjellm.
77. Carpoblepharis Schmitziana (Rbd.) Okam.
78. Ceramium clavulatum Ag.
79. Microcladia corallinae (Mart.) Okam.
80. Campylaephora Hypnaeoides J. Ag.
81. Gloiopeltis cervicornis (Suring.) Schmitz.
82. Peyssonnelia caulifera Okam.
83. Corallina radiata Yendo.
84. Zonaria Diesingiana J. Ag.
85. Scytosiphon lomentarius (Lyngb.) J. Ag.
86. Endarachne Binghamiae J. Ag.
87. Cladosiphon decipiens (Suring.) Okam.
88. Cylindrocarpus rugosa Okam. Sp. Nov.
89. Leathesia difformis (L.) Aresh.
90. Mesogloea crassa Suring.
91. Chordaria abietina Rupr.
92. Ulva conglobata Kjellm.
93. Chaetomorpha crassa (Ag.) Kuetz.
94. Chaetomorpha spiralis Okam. Sp. Nov.
95. Caulerpa ambigua Okam.
96. Chlorodesmis comosa Bail. et Harv.
97. Codium adhaerens (Cabr.) Ag.
98. Rhipidiphyllon reticulatum (Ask.) Heydr.
99. Boodlea coacta (Dickie) Murr. et De Toni.
100. Brachytrichia Quoyi (Ag.) Born. et Flah.

NOTICE.

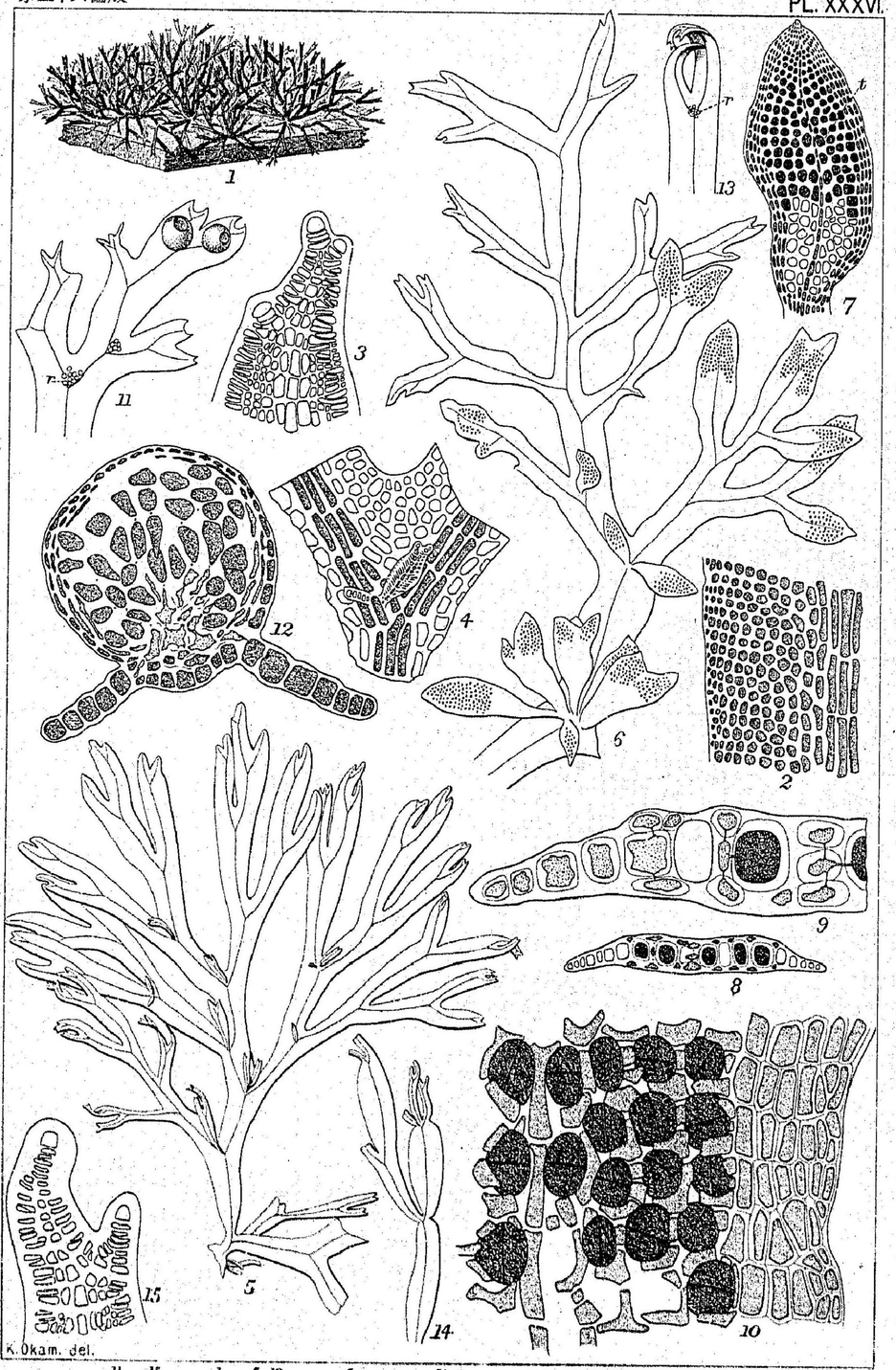
Price (exclusive of postage) of every Fasciculus:—30 m.k.=30 shill.=37.5 fr.=$ 7.50.

Subscribers to be addressed to the author:

No. 4, Ni-chomé, Shin-Ogawamachi, Ushigome, Tokyo, Japan.

第三十六圖版

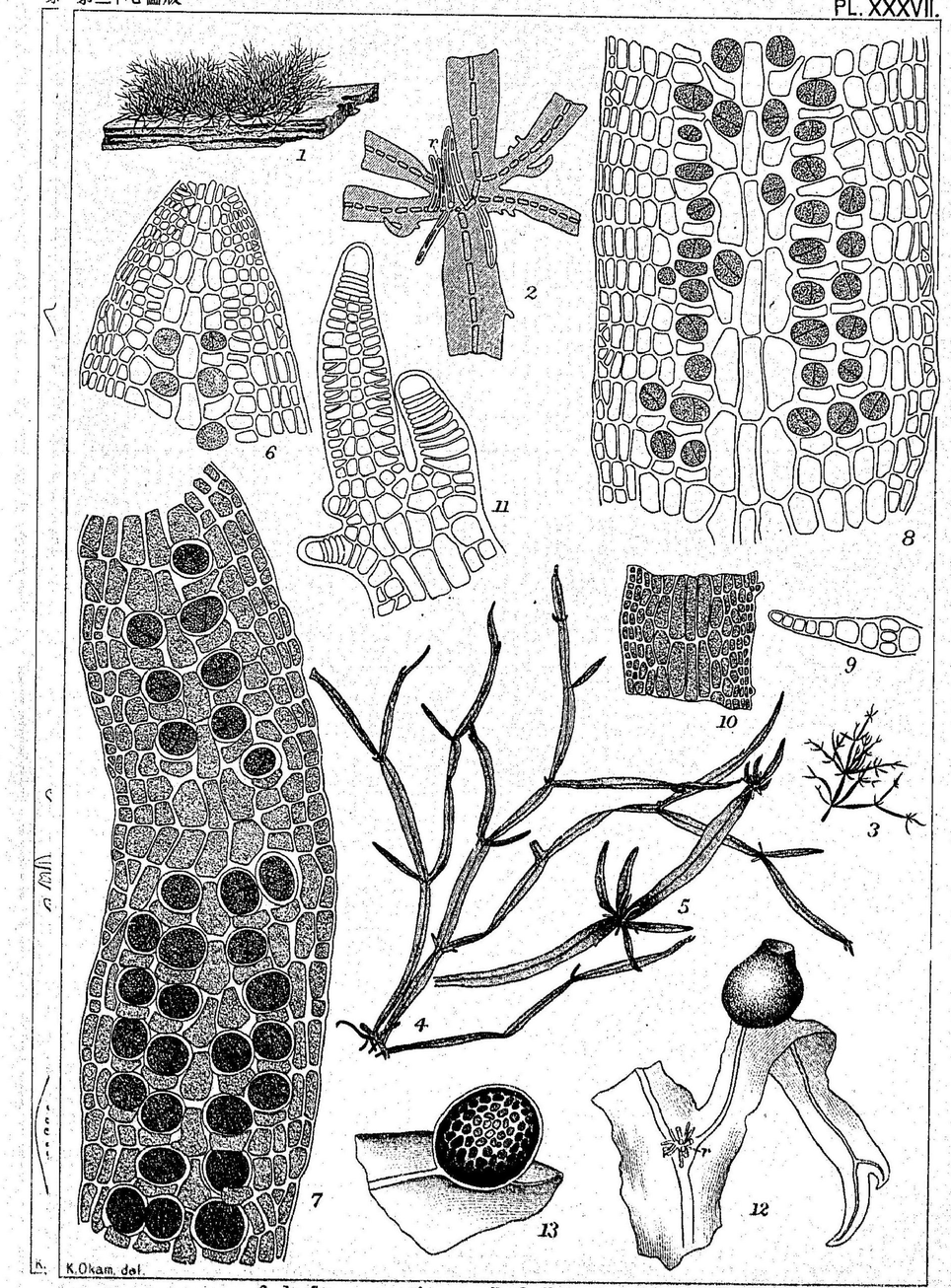
PL. XXXVI.



Caloglossa Leprieurii (Mont.) J. Ag.

あやぎぬ Fig. 1-15.

第三十七圖版 PL. XXXVII.



Caloglossa ogasawaraensis Okam. いとあやぎぬ Fig. 1-11.

Caloglossa Leprieurii (Mont.) J. Ag. [illegible] Fig. 12-13.

Caloglossa Leprieurii (Mont.) J. Ag.

Nom. Jap.: *Aya-ginu.*

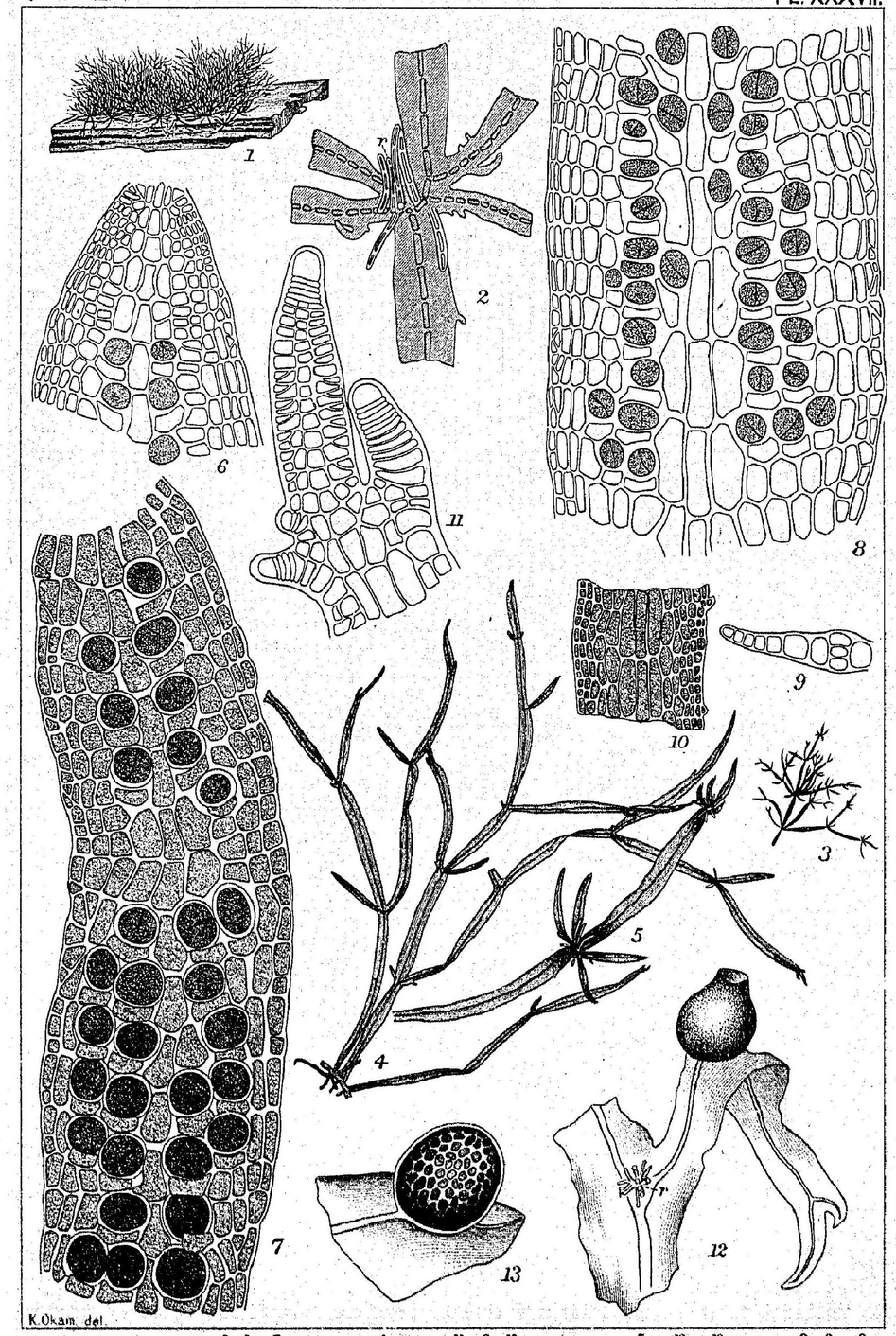
PL. XXXVI, Fig. 1-15; PL. XXXVII, Fig. 12-13.

Caloglossa Leprieurii (Mont.) J. Ag. Epicr. p. 499; Cramer Ueber Calog. Lepr. (1891) cum 3 tab.; De Toni Syll. Alg. IV, p. 729.—*Caloglossa Leprieurii* (Mont.) J. Ag. *var. continua* Okam. Alg. Jap. Exsic. (岡村, 日本海藻標品) Fasc. II, no. 67; Id. Contents of the Alg. Jap. Exsic. p. 1 (Bot. Mag. Tokyo, Vol. XVII, 1903).—*Caloglossa Leprieurii* (Mont.) J. Ag. *var. alternifolia* Okam., 日本藻類名彙 p. 51.—*Delesseria Leprieurii* Mont. in Ann. Sc. Nat., Bot., II. Ser., t. 13, p. 196, Cent. II, t. V. f. 1; Harv. Ner. Bor. Amer. t. XXII, *c*; J. Ag. Sp. Alg. II, p. 682.—*Hypoglossum Leprieurii* Kuetz. Sp. Alg. p. 875; Id. Tab. Phyc. XVI, t. 10.

Hab.: On piles, twigs, stones etc. at river mouth. Kaidaichi (near Hiroshima, Prov. Aki), Prov. Tosa, Hamajima (Prov. Shima), River Ko-yahagi (Prov. Mikawa), Atsuta (Prov. Owari), River Sumida and Fukagawa (Tokyo). Fruits:—Summar.

Remarks: When I distributed the specimens of the present plant in my "Algae Japonicae Exsiccatae" Fas. II, no 67, I took it for a variety, having been struck by the mostly subalternate arrangements of branches and continuous (i.e. not strongly constricted) joints. The diagnosis I have given for the new var. *continua* runs as follows:—"Fronds decumbent, irregularly dichotomous or often subalternate, continuous (not constricted), slightly bending at apices toward the under-surface." But, more afterward, as I found that these characters are not strictly peculiar to our plants, though such are more usual in them and also that there are similar cases in exotic

第三十七圖版 PL. XXXVII.



Caloglossa ogasawaraensis Okam. いとあやぎぬ Fig. 1-11.
Caloglossa Leprieurii (Mont.) J. Ag. すやぎぬ Fig. 12-13.

Caloglossa Leprieurii (Mont.) J. Ag.

Nom. Jap.: *Aya-ginu.*

PL. XXXVI, Fig. 1-15; PL. XXXVII, Fig. 12-13.

Caloglossa Leprieurii (Mont.) J. Ag. Epicr. p. 499; Cramer Ueber Calog. Lepr. (1891) cum 3 tab.; De Toni Syll. Alg. IV, p. 729.—*Caloglossa Leprieurii* (Mont.) J. Ag. *var. continua* Okam. Alg. Jap. Exsic. (岡村, 日本海藻標品) Fasc. II, no. 67; Id. Contents of the Alg. Jap. Exsic. p. 1 (Bot. Mag. Tokyo, Vol. XVII, 1903).—*Caloglossa Leprieurii* (Mont.) J. Ag. *var. alternifolia* Okam., 日本藻類名彙 p. 51.—*Delesseria Leprieurii* Mont. in Ann. Sc. Nat., Bot., II. Ser., t. 13, p. 196, Cent. II, t. V. f. 1; Harv. Ner. Bor. Amer. t. XXII, *c*; J. Ag. Sp. Alg. II, p. 682.—*Hypoglossum Leprieurii* Kuetz. Sp. Alg. p. 875; Id. Tab. Phyc. XVI, t. 10.

Hab.: On piles, twigs, stones etc. at river mouth. Kaidaichi (near Hiroshima, Prov. Aki), Prov. Tosa, Hamajima (Prov. Shima), River Ko-yahagi (Prov. Mikawa), Atsuta (Prov. Owari), River Sumida and Fukagawa (Tokyo). Fruits:—Summar.

Remarks: When I distributed the specimens of the present plant in my "Algae Japonicae Exsiccatae" Fas. II, no 67, I took it for a variety, having been struck by the mostly subalternate arrangements of branches and continuous (i.e. not strongly constricted) joints. The diagnosis I have given for the new var. *continua* runs as follows:—"Fronds decumbent, irregularly dichotomous or often subalternate, continuous (not constricted), slightly bending at apices toward the under-surface." But, more afterward, as I found that these characters are not strictly peculiar to our plants, though such are more usual in them and also that there are similar cases in exotic

forms, as it is shown in Cramer's l.c, Taf. I, fig. 8 and 9, I came to conclude that our plant is not so much different from the typical species that it should be taken for a variety.

PL. XXXVI. Fig. **1**: fronds of *Caloglossa Leprieurii* growing on plank in nat. state and size, $\frac{1}{1}$.—Fig. **2**: surface-view of the half of frond, $\frac{80}{1}$.—Fig. **3**: growing portion of frond, $\frac{220}{1}$.—Fig. **4**: young proliferations, $\frac{80}{1}$.—Fig. **5**: frond having more regular arrangements of segments, $\frac{5}{1}$.—Fig. **6**: frond having subalternate segments bearing tetrasporic sori, $\frac{12}{1}$.—Fig. **7**: fertile segment with a tetrasporic sorus, *t*; the lower cells already emptied, $\frac{54}{1}$.—Fig. **8**: cross-section of a sorus, $\frac{80}{1}$.—Fig. **9**: portion of the same, $\frac{220}{1}$.—Fig. **10**: surface-view of a portion of sorus on the right side of the midrib, showing tetrasporangia and cortical cells, $\frac{220}{1}$.—Fig. **11**: under-surface of frond, showing cystocarps and beginning of roots, *r*, $\frac{12}{1}$.—Fig. **12**: longitudinal section of a cystocarp, $\frac{140}{1}$.—Fig. **13**: terminal portions of frond bending toward the undersurface ; *r*, roots, $\frac{12}{1}$.—Fig. **14**: portion of frond taken from an American specimen, slightly magd.—Fig. **15**: growing apices of the same, $\frac{450}{1}$.

PL. XXXVII, Fig. 12-13. Fig. **12**: cystocarp and root fibres, *r*, $\frac{22}{1}$.—Fig. **13**: surface-view of cystocarp, $\frac{80}{1}$.

Caloglossa (Harvey 1852) J. Agardh 1876.

あやぎぬ屬.

SARCOMENIAE (DELESSERIACEAE).

サルコメニア亞科　(このはのり科).

體ハ扁平,葉狀,屢々叉狀ニ分岐シ,分岐點ニ於テクビレタル如クナリテ關節シ,此所ヨリ往々其裏面ニ副枝ヲ發出ス;成長點ハ橫ニ關節セル大ナル頂細胞ヲ有シ,體ハ一層ノ細胞ヨリ成リテ薄ク,中肋ヲ存ス;中肋ハ之ヲ上ヨリ見ル時ハ三條ノ

細胞列ヨリ成ル——四分胞子囊ハ澤山ニ上部ノ枝ニ生ジ,中肋ノ兩側ニ於テ一層ニ形成セラレ,少シク斜上セル列ヲナシテ規則正シク排列ス(此部分ハ上下ニ一層ノ皮層細胞ヲ有スルヲ以テ,胞子ハ其中層ノ細胞ヨリ形成セラル);胞子ハ三角錐形ニ分裂ス.　胎原ハ上部ノ枝ノ中肋ニ沿ヒテ其裏面ニ形成セラル.　囊果ハ往々強ク反曲セル最上部ノ枝ノ頂端ニ近ク,若クハ分岐點ニ於テ,裏面ニ一個ヅヽ形成セラレ,中肋上ニ座シ,小ニシテ球狀ニ膨出ス;胎座ハ僅ニ認ムルヲ得ベク,果皮ハ薄ク,果皮ノ內層ハ稍緩ク構成セラレ,小サキ不明ナル果孔ヲ存ス;胞子ヲ成熟スル絲ハ束狀ヲナシテ密ニ相集リ,胞子絲ノ各關節ハ胞子トナリ,相集リテ腎臟形ノ塊ヲナス.

4-5種類アレドモ,孰レモ甚シク異ナルコトナク,各種ノ差極メテ僅カナリ.　凡テ腰海ノ產ニシテ,概テ淡鹹兩水ノ混交スル河口ノ如キ所ニ生ズ.　太平洋ニ產スルモノ多シ.

屬ノ名ハ calos (美シキ) ト glossa (舌) トヨリ成ル,即チ體形ト其美ナルトニ採レルモノナリ.

Caloglossa Leprieurii J. Ag.

あやぎぬ　岡村稱.

第XXXVI圖版, 1-15圖; 第XXXVII圖版, 12-13圖.

體ハ扁平,葉狀,細キ線狀ニシテ,屢々叉狀ニ分岐シ,分岐點ノ裏面ヨリ毛狀ノ根ヲ出シテ匍匐シ,叢生ス,幅1 mm.ニ足ラズ.　分岐ノ性質ハ叉狀ナレドモ,正シカラズシテ叉枝稍互生ヲナスモノ多シ,罕ニ稍正シキ叉狀ヲナスモノナシトセズ,而シテ分岐點ノ裏面ヨリ副枝ヲ生ズルコト常ナリ.　分岐點ハ多少クビルレドモ往々殆ドクビレザルコトアリ,而シテ枝端ハ概テ裏面ノ方ニ反曲ス.　體ハ一層ノ細胞ヨリ成リ,其排

列極メテ規則正シクシテ，先ヅ中肋ヨリ斜ニ一列ノ細胞ニテ成レル枝ヲ兩側ニ出シ，其枝ノ各細胞ヨリ體ノ緣邊ニ向テ同樣ノ枝ヲ出シ，此枝相互ニ並行スルコト，第2圖ト3圖トニ明ナリ.——四分胞子囊ハ上部ノ枝ニ群集シテ正シキ排列ヲナシ，體ノ中層ノ細胞ヨリ形成セラル(第9圖). 囊果ハ球狀ニシテ上部ノ分岐點若クハ上部ノ枝ノ中肋ノ裏面ニ生ズ. 質ハ薄キ膜質ニシテ紙ニ付着セズ. 色暗紫色ニシテ乾燥スルトキハ美シキ青味ヲ帶ブ.

産地：河口ノ棒杭，板等ノ上ニ付着ス. 廣島海田市，土佐下知村葛島橋下，志洲濱島，三河古矧川口，尾張熱田，江戸川口；隅田川本所橫網，深川越中島(東京). 果實：—夏季.

分布：太西洋溫暖部，太平洋，ニウホルランド，ニウジーランド，印度洋.

備考. 囊キニ予ノ日本海藻標品第二帙ヲ發行スルニ當リ，予ハ本植物ノ分岐ノ稍互生ナルト，分岐點ノクビレ方ノ甚シカラザルトヲ以テ，之ヲ模範種ヨリ少シク變形シタルモノト認メ，Var. continua Okam. ナル名稱ヲ付シテ其第97號ニ編入セリ. 爾來多數ノ標品ニ就テ見ルニ，上記ノ性質ハ必ズシモ重キヲ置クニ足ラズ，其否ラザルモノモ往々ニシテ存スルコトヲ知レリ；加フルニ Cramer's Ueber Calog. Lepr. (1891) Taf. I, fig. 8 and 9 ニ依ルニ，海外ノモノニテモ同ジク稍互生ニシテ本邦ノモノト同樣ノ形セルモノアリ而シテ別ニ之ヲ變種ト認メザルヲ知リタルヲ以テ，茲ニ予ハ予ノ囊ニ Var. continua トシタルモノ並ニ予ノ日本藻類名彙ニ Var. alternifolia トシタルモノヲ廢スルノ至當ナルヲ認ルニ至レリ. 本種ノ如ク廣ク各地ニ分布スルモノハ自然周圍ノ狀況ニ應ジテ多少ノ變形ヲ免カレザルコトヲ思ヘバ，些ノ相違ハ敢テ種ノ價値ヲ云々スルニ足ラズト思惟ス.

第XXXVI圖版，1-15圖. 1：Caloglossa Leprieurii, あやぎぬ，ノ板上ニアルモノ，$\frac{1}{1}$.—2：體ノ表面ノ半分，$\frac{80}{1}$.—3：上部ノ枝ノ表面ニシテ，成長點細胞ト表面細胞ノ形成セラルヽ狀トヲ示ス，$\frac{220}{1}$.—4：體ノ裏面ヨリ副枝ヲ生ズルモノ，$\frac{80}{1}$.—5：稍正シク叉狀ヲナセルモノ，$\frac{5}{1}$.—6：互生ノ如キ分岐ヲナセルモノニシテ四分胞子群ヲ有スルモノ，$\frac{12}{1}$.—7：四分胞子群；t，胞子；下ナル無色ノ細胞ハ胞子ノ脫出シタルモノ，$\frac{54}{1}$.—8：胞子群ノ橫斷面，$\frac{80}{1}$.—9：同上ノ一部，$\frac{220}{1}$.—10：中肋ノ右半部ニ於ケル四分胞子ト其皮層細胞，$\frac{200}{1}$.—11：體ノ裏面ヨリ見テ囊果ト毛狀根，r，トヲ示ス，$\frac{12}{1}$.—12：囊果ノ縱斷面，$\frac{140}{1}$.—13：裏面ノ方ニ枝端ノ反曲スル狀；r，毛狀根，$\frac{12}{1}$.—14：米國ノ標本ヨリ比較ノ爲メ取リタル體ノ一部，郭大.—15：同上ノ一部，$\frac{450}{1}$.

第XXXVII圖版，12-13圖. 12：體ノ裏面ニ囊果ト毛狀根，r，トアルモノ，$\frac{22}{1}$.—13：囊果ヲ表面ヨリ見タルモノ，$\frac{80}{1}$.

Caloglossa ogasawaraensis Okam.

Nom. Jap.: *Hoso-ayaginu.*

PL. XXXVII, Fig. 1-11.

Caloglossa ogasawaraensis Okam. Algae from Ogasawarajima (1897) p. 13, f. A-D. (Bot. Mag. Tokyo, Vol. XI, No. 120, p. 14, 1897).—De Toni Syll. Alg. IV, p. 730; Okam. Alg. Jap. Exsic., (日本海藻標品) Fasc. II, no. 68; 岡村，日本藻類名彙 p. 51.—*Caloglossa Zangibariensis* Goeb. Eine Süsswasserfloridee aus Ost-Afrika p. 5 (Flora Vol. 85, 1898, p. 65, f. 1-6); De Toni Syll. Alg. IV, p. 731.

Diagn. "Fronds violaceous, pulvinate, caespitose, repent, thinly mid-ribed, with narrow, linear-lanceolate, leafy segments, at-

tenuated towards both ends, not stipitate, unequally dichotomous, subarticulatedly constricted, rooting and proliferating new similar leaves from constricted parts, also proliferating laterally from both sides of basal portion of segments, thus assuming fascicular disposition of segments."—*Okam. Alg. fr. Ogasaw.*

Hab.: On piles, twigs, stones etc. at river mouth. Ogasawara-jima (R. Yatabe Matsumoto), Prov. Tosa, River Ko-yahagi in Prov. Mikawa, Atsuta in Prov. Owari, River sumida, River Yedo, Tokyo, River Tone, Isohara in Prov. Hitachi.

Descrip. "Segments are very narrow, linear-lanceolate, 500-900 μ broad, 3-5 mm. long, almost even or slightly undulated at margin, twisted, gradually attenuating towards both ends, more narrowly towards the base, and not petiolated, more or less provided with the continuation of the wing. The mode of ramification is dichotomous; but two arms of the dichotomy are not equal in length and size, one being always shorter and narrower than the other; often one arm is entirely suppressed. Proliferations from the mid-rib are observed neither in the membranous nor in the constricted parts. In the constricted parts, new leaves similar in shape to the segments are proliferated from both sides, and also from both margins of the basal portion of segments; they rise near to each other on one side and even as many as three are proliferated along one side. Proliferated leaves again proliferate other ones from similar places. Thus the segments seem to the naked eye to arise fasciculately from the constriction. The proliferated leaves are not at first united to the main segments by a distinct continuation of the mid-rib, as in the continuation of the main segments; but a little afterwards some of the cells of the membranous portion of segments become a little larger and larger than other cells and they form the continuation of the mid-rib.

Structure of frond does not essentially differ from other related species"—*Okam. l.c.* Tetrasporic sori are more or less elongated.

Remarks: "On making comparison with the original specimen of *Col. Zanzibariensis* Goeb. which Mr. Reinbold has kindly sent me, I have found my plant to be identical with that mentioned."—*Okam. Alg. Jap. Exsic. no. 68.*

PL. XXXVII, Fig. 1-11. Fig. **1**: *Caloglossa ogasawaraensis* Okam. in nat. state and size.—Fig. **2**: mode of branching from constricted part; *r*, roots; $\frac{54}{1}$.—Fig. **3**: portion of frond detached, $\frac{1}{1}$.—Fig. **4-5**: portion of fronds, magd., $\frac{12}{1}$.—Fig. **6-8**: upper, middle and lower portion of a sorus respectively, $\frac{220}{1}$.—Fig. **9**: cross-section of frond, $\frac{80}{1}$.—Fig. **10**: surface-view of frond, $\frac{91}{1}$.—Fig. **11**: growing apices of frond, $\frac{390}{1}$.

Caloglossa ogasawaraensis Okam.

ほそあやぎぬ　岡村稱.

第XXXVII圖版, 1-11圖.

體ハ細キ線狀ニシテ扁平, 葉狀, 不規則ニ叉狀ニ分レ, 分岐點ハ宛モ關節セル如ククビレ, 其部ノ裏面ヨリ毛狀根ヲ出シテ匍匐シ, 叢生ス; 幅0.5-1 mm. ニシテ, 各節間ノ長サ3-5 mm. アリ. 體ハ往々捻レ, 各部ノ緣邊ハ平坦若クハ輕ク波狀ヲナシ, 上下ノ分岐點ノ方ニ細ケレドモ, 柄ヲ有スル如クナラズシテ, 膜ハ多少廣ク連ナル. 分岐法ハ叉狀ナレドモ, 叉枝ハ長サ及ビ大サトモ等シカラズ, 又往々其何レカ一方ノ枝ハ全ク存セザルコトアリ. 膜狀部並ニ結節部ノ中肋ヨリ枝ヲ副出スルコトハアラズシテ, 結節部ニアリテハ, 兩緣ヨリ他ノ部ト同樣ノ枝ヲ生ジ, 各部ノ基部ニ近キ所ノ兩緣ヨリモ亦之ヲ生ズ; 其

出ルヤ互ニ相接近シ，往々三條ノ枝同一側ヨリ出ルコトアリ，此副出シタル枝更ニ又同様ノ所ヨリ同様ニ副出ス；故ヲ以テ肉眼ニテハ，枝ハ結節點ヨリ叢生スル如ク見ユ．　副出シタル枝ハ始メ他ノ部ト中肋ヲ以テ連結スルコトナシト雖モ，後之ヲ生ジテ彼是相連ルニ至ル．　體ノ構造及ビ四分胞子嚢群ハ他ノ種ト大體ニ於テ差ナシ．　子嚢群ハ多少長シ．

産地：河口ノ杭，小枝，石等ノ上ニ付着ス．　小笠原島，(矢田部博士，松本)，土佐下知村葛島橋下(椎原)，三河古知川，熱田，隅田川本所横網，江戸川，深川越中島，利根川，常陸磯原．

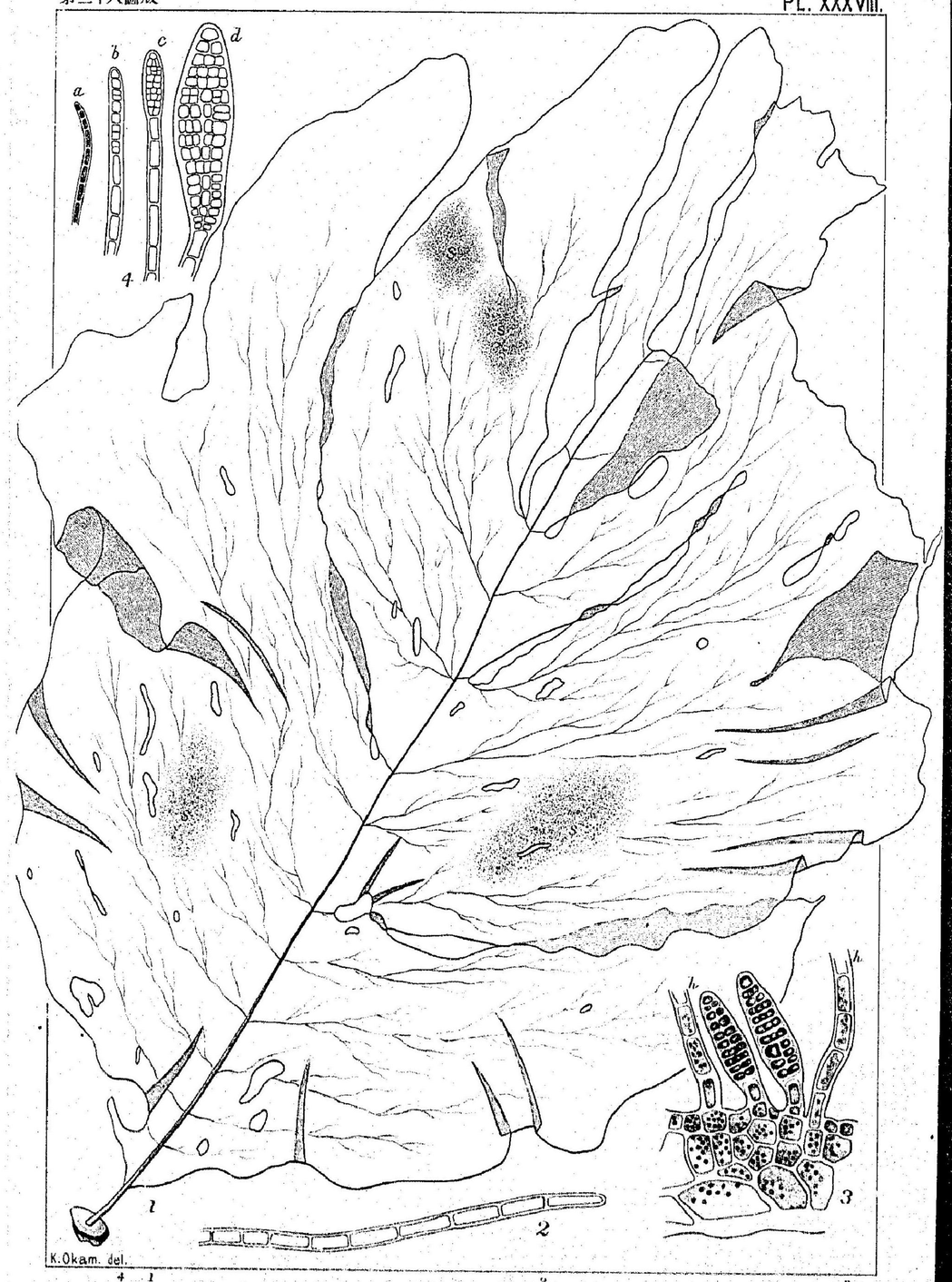
分布：亞弗利加ザンジバール．

備考：本種ハ結節點ノ部分葉柄ノ如ク細カラザルト，各關節ノ基部ノ兩縁ヨリ枝ヲ生ズルトニヨリテ Calogossa Beccari Zanard. ト異ナリ，分布ノ點ヨリスレバ太洋洲方面ニ産スル C. mnioides Harv. ニ類スレドモ，此種ハ叉枝ノ不同ナラザルト各節間ノ基部ノ兩縁ヨリ枝ヲ副出セザルトニ依リテ本種ト異ナリトス．　1898年 Geobel 氏ハ Stuhlmann 氏ガ南亞弗利加東岸ニテ得タル一種ヲ Cal. Zanzibariensis ト命名シテ發表シタレドモ，予ハ Reinbold 氏ノ厚意ニ依リ氏ヨリ贈ラレタル其種ノ標品ニ就テ見ルニ，該種ハ本種ト同一ナルコトヲ知リタルヲ以テ，予ハ此ヲ本種ニ合セタリ；近頃 Oltmanns 氏モ予ノ説ヲ賛スルコト氏ノ Morph. u. Biologie der Algen 第II卷175頁ニ説アリ．

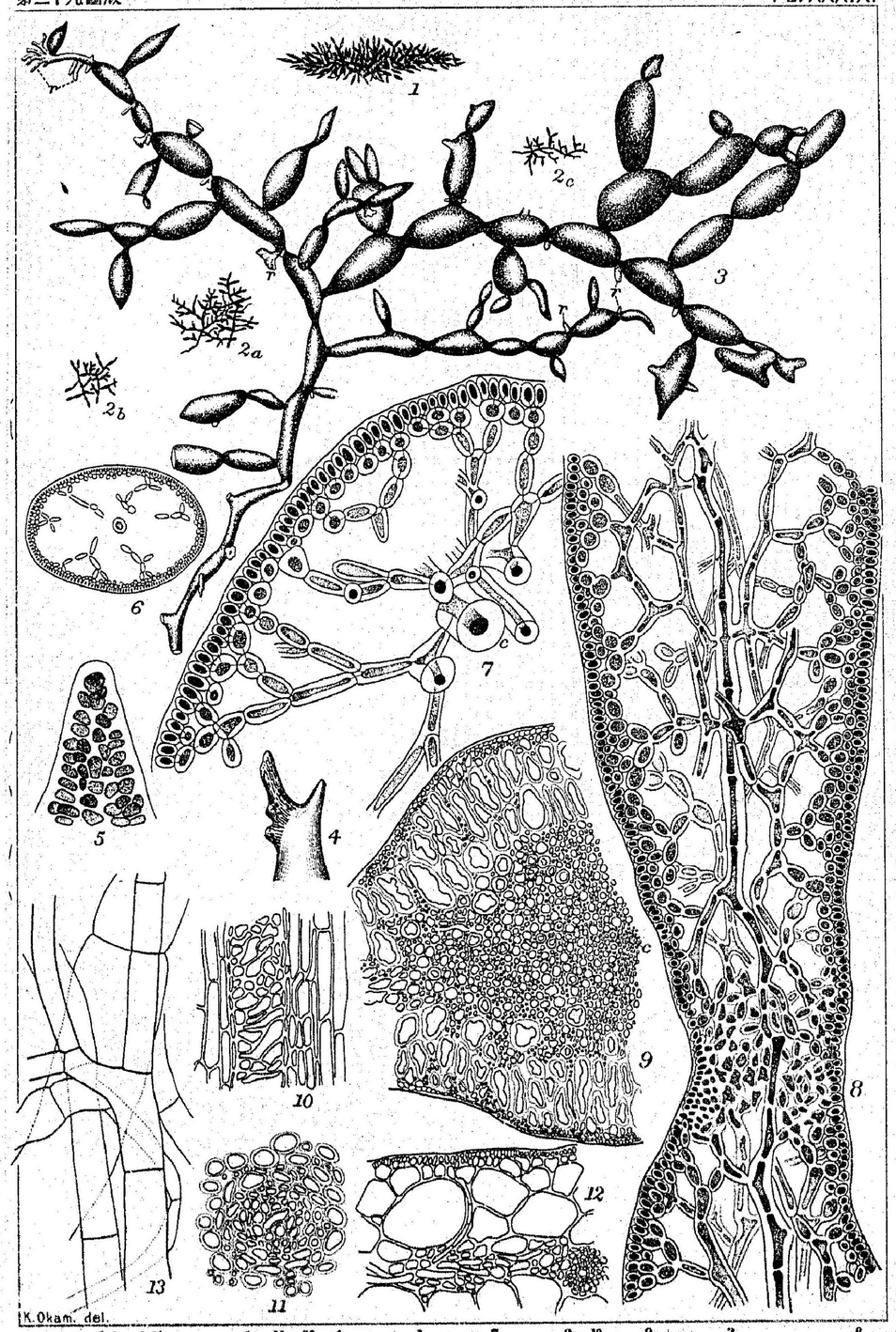
第XXXVII圖版，1-11圖．　**1**：Caloglossa ogasawaraensis Okam.，いとあやぎぬノ自然ノ狀態，$\frac{1}{1}$．—**2**：結節部ヨリ枝ヲ生ズル狀；ア根；$\frac{54}{1}$．—**3**：體ノ一部ヲ分離シタルモノ，$\frac{1}{1}$．— **4-5**：同上，$\frac{12}{1}$．— **6-8**：四分胞子嚢群ノ上部，中部及下部，$\frac{220}{1}$．—**9**：體ノ横断面，$\frac{80}{1}$．—**10**：體ノ表面，$\frac{91}{1}$．—**11**：成長點，$\frac{300}{1}$．

第三十八圖版

PL. XXXVIII.



Desmarestia tabacoides Okam. n. sp. たむさぐさ Fig. 1-4.



Catenella Opuntia (G.et W.) Grev. いそもくくわ Fig. 1-8.
Desmarestia tabacoides Okam. n. sp. たばこぐさ Fig. 9-13.

Desmarestia tabacoides Okam. n. sp.

Nom. Jap.: *Tabako-gusa.*

PL. XXXVIII, Fig. 1-4; PL. XXXIX, Fig. 9-13.

Tabacopsis acetosa Okam. 日本藻類名彙 p. 121.

Diagn.: Fronds very large, leaf-like, shortly stipitate with broadly oval, very usually obliquely lobed, simple, midribed and coriaceous lamina. The midrib is slightly prominent below but gradually becoming fainter upwards, with opposite veins which dissolve, even from the base, into numerous fine veinlets. Sori forming irregularly roundish patches on both surfaces. Gametangia ovato-cylindrical or oblong, produced on the apical portion of simple hairs being accompanied by sterile ones. Colour chestnut-brown when recent, soon changing into bluish-green when exposed to air.

Hab.: On rocks, stones or shells of *Haliotis gigantia* between tide-marks. Nagasaki, Nemoto (Bōshyū), Enoshima (Prov. Sagami), Onahama (Prov. Iwaki). Gametangia: June-August.

Descr. Fronds very large, leaf-like, rising from a circular disc, with a short subcylindrical stem which is 1-2 cm. long and about 2 mm. in diameter. Lamina oval or oblong, simple and not lobed in young state, being traversed by a slightly prominent midrib which becomes weaker upwards and finally vanishes before reaching the apex. On both sides of the midrib, there arise opposite veins which soon dissolve, even from the base, into numerous fine veinlets and become invisible to the naked eyes towards margins. The lamina is very rarely almost simple and entire when old; but it becomes usually torn up obliquely into many lobes, whose indentation often reaches the midrib. There is no regularity in the arrangements of these lobes

which are of variable breadths. The outline of lamina is of large oval shape when carefully spread out in a plane, assuming the shape very much resembling a leaf of tobacco-plant, with the length of 30-70 cm. and breadth of 20-50 cm.

Structure of frond: In cross-section of midrib we find an axis occupying the centre. The axis is not composed of a single longitudinal row of cylindrical cells, but of many short filamentous cells, densely packed and firmly coalesced in a very irregular manner. Surrounding the axis, there is a layer composed of a thick bundle of longitudinally disposed cylindrical cells whose diameters are not uniform. Outside this layer, there is a thin layer of large empty parenchymatic cells, which diminish in size toward the surface, being covered by one or two layers of epidermal cells. The wall of the parenchymatic cells is thick and greatly swells up on absorbing water. Epidermal cells are polygonal when seen in surface-view. The structure of stem is exactly same as that of a thicker midrib except in the smallerness of parenchymatic cells. The central portion of stem is often destroyed by age, leaving a cavity. The structure of fine veinlets in membranous portion is essentially same as that of the midrib. Veinless portion of lamina is composed of 3 layers of cells. The medullary layer consists of filamentous cells, irregularly running and anastomosing by branching. The intermediate layer is composed of a few large empty parenchymatic cells externally covered up by one or two layers of epidermal cells. Peculiar roundish cells, filled up with glittering contents, are uniformly scattered in the epidermal layer. Mode of growth of frond is at present unknown, owing to the lack of a very young frond.

Fructification: Gametangia are produced from hairs composed of a single row of cells. They are simple, never branched, and of the same nature as sterile hairs, each being produced from an epidermal

cell. Fertile ones have a definite growth, while sterile hairs grow indefinitely, elongating by the division of basal cells. The hairs in which gametangia are formed remain short; some cells near the free extremity divide by transverse partitions into smaller cells and puts the begining of gametangia, while the lower ones remain unchanged. The fertile cells then divide longitudinally and double rows of cells are thus formed. By repetition of longitudinal and transverse divisions, gametangia are fully formed, which are ovato cylindrical or oblong. They are furnished with a pedicel composed of a single longitudinal row of cylindrical cells. The number of cells composing the pedicel varies from 2 to 6 or perhaps more. The length of sterile hairs varies from 203 to 384 μ with the breadth of 8.5–13 μ, while that of gametangia 38–53 μ by 13–15 μ, and the total length of the fertile hairs (i.e. gametangia and pedicel taken together) amounts to 43–114 μ. By this way, gametangia are accompanied by a few sterile hairs and both occupy irregularly roundish patches or sori having no definite boundary. Paranemata and sporangia unknown at present.

Colour and substance: The plant is chestnut-brown in colour when fresh. After removal from the sea it soon changes into pale greenish-yellow in exposure to air, or into dirty greenish-blue when heaped together, owing to the decomposition. After drying, the colour changes into dull greenish-yellow. The plant gives slightly astringent and sour taste. The substance is coriaceo-membranous and rather brittle when fresh, but soon changes into tenacious consistency. In drying, plant becomes very thin and papyraceous, and does not adhere to paper.

Remarks: Having been struck by the larger size of frond and nature of gametangia, I took the present plant provisionally for a new genus, naming it *Tabacopsis acetosa* in my Nippon Sorui-Meii ("Enu-

meration of Japanese Algae") p. 121, putting it under subfamily *Tabacopsideae* of Fam. *Desmarestiaceae*. More afterward, however, characters of its changing colour of frond, its having astringent and sour taste, and its having midrib and veins led me to consider it as a species of *Desmarestia* in relation with other plants of that genus, though the mode of growth of frond is not known at present. The nature of reproductive organ is now imperfectly known among the plants belonging to the Family *Desmarestiaceae*, only unilocular sporangia having been detected in some species of *Desmarestia* and *Arthrocladia*. If my identification proves to be correct, then, the nature of plurilocular sporangia or gametangia may be said to have been brought to light.

PL. XXXVIII. Fig. **1**: frond of *Desmarestia tabacoides* Okam. n. sp. bearing sori, *s*, *s*, $\frac{1}{3}$.—Fig. **2**: one of sterile hairs, $\frac{350}{1}$.—Fig. **3**: portion of cross-section of frond with 2 gametangia and hairs, *h*, *h*, $\frac{600}{1}$.—Fig. **4**: different stages of the developement of gametangia; *a*, $\frac{220}{1}$; *b-d*, $\frac{600}{1}$.

PL. XXXIX, Fig. 9-13. Fig. **9**: portion of the cross-section of thicker midrib; *c*, the central axis; $\frac{50}{1}$.—Fig. **10**: longitudinal section of the central axis, $\frac{220}{1}$.—Fig. **11**: cross-section of the same, $\frac{220}{1}$.—Fig. **12**: portion of cross-section of the lamina with a veinlet, $\frac{90}{1}$.—Fig. **13**: filaments forming the medullary layer of the membranous portion of lamina, $\frac{220}{1}$.

Desmarestia Lamouroux 1813.

うるしぐさ屬.

DESMARESTIACEAE. うるしぐさ科.

體ハ絲狀, 扁壓又ハ扁平ニシテ「バンド」狀乃至葉狀ヲナ

シ, 時トシテハ中肋並ニ側脈ヲ存シ, 兩緣ヨリ或ハ對生ニ或ハ互生ニ枝ヲ生ジ, 枝ハ概ネ明ニ長條ト短條トニ區別セラル. 短條ハ老成スル時ハ往々齒狀ヲナス. 體ハ始メ頂端ニ至ルマデ分岐セル細胞列ヨリ成リ, 其主軸並ニ側枝ハ頂端下ノ一局部ナル細胞ノ屢々橫ニ分裂スルコトニ依リテ長サヲ增シ, 頂端ノ方ニハ別ニ皮層ヲ生ズルコトナクシテ裸出スレドモ, 下部ノ方ニハ後ニ形成セラルベキ「パレンキマ」細胞ノ組織ヲ以テ蔽ハルヽニ至ル(此伸長法ハ頂毛成長(trichothallic growth)ト稱スルモノナルコト予ノ海藻學汎論40頁第5圖1ニアリ). 斯クテ充分發育シタル體ハ全部皮層細胞ヲ存スルモノニシテ, 其皮層組織ノ內層ハ大小不同ノ圓形—多角形ノ細胞ヨリ成リ, 外層ハ小サキ細胞ヲ以テ成ル. 子囊ハ未ダ充分ニ明ナラズ; 其或種 (D. viridis (Müll.) Lamx.) ニ就テ知ラレタルモノハ一個ノ表皮細胞大ニナリ圓形ナル格圍狀ヲナシテ內ニ動子ヲ形成スルモノトス.

約12種アリ; 多數ハ大西洋及太平洋ノ南部ニ產ス. 其最モ廣キ分布ヲ有スルモノハ D. ligulata (Light.) Lamx., 及ビ D. viridis (Müll.) Lamx. ニシテ兩種トモ我邦ニモアリ; 就レモ海ヨリ取リ出サルヽヤ否ヤ色素ノ速ニ分解スル性質アリテ, 概ネ澁味アル酸味ヲ有ス. 北部ノ海ニハ D. aculeata (L.) Lamx. 多シ.

屬ノ名ハ佛國ノ博物學者 A. G. Desmarest 氏ノ名譽ノ爲ニ命ジラレタリ.

Desmarestia tabacoides Okam. 新種.

たばこぐさ 岡村稱.

第XXXVIII圖版, 1-4圖; 第XXXIX圖版, 9-13圖.

性質: 體ハ甚ダ大ニシテ, 葉狀, 短莖ヲ有シ, 濶キ卵圓形

ノ葉片ヲナス；葉片ハ概ネ常ニ斜ニ裂ケ，單葉ニシテ，中肋ヲ存シ，硬キ膜質ニシテ脆シ．　中肋ハ下部稍隆起スレドモ，漸次上方ニ細徴トナリ，對生セル側脈ヲ存ス；側脈ハ殆ド其起點ヨリ多數ノ微細ナル細脈ニ分ル．——子嚢群ハ體ノ兩面ニ不規則ナル圓班ヲ形成ス．「ガメート」嚢ハ單條ナル毛ノ上部ニ形成セラレ，卵形—圓柱狀乃至長楕圓形ニシテ，他ノ中性ナル毛莖ト混在ス．　色ハ新鮮ノ時ハ栗色ナレドモ，空氣ニ觸ルヽトキハ忽チ青綠色ニ變ズ．

產地：潮綠間ノ岩石又ハ鮑殼上等ニ產ス．　長崎，房州根本，相州江ノ島，磐城小名濱．　子嚢：六-八月．

記載．體ハ甚ダ大ニシテ葉狀，圓キ吸盤狀根ヨリ稍圓柱狀ナル短キ莖ヲ以テ立チ，莖ハ 1-2 cm. 長クシテ直徑約 2 mm. アリ．葉片ハ卵圓形又ハ長楕圓形ヲナシ，幼キ時ハ單葉ニシテ分裂スルコトナク，少シク隆起セル中肋ヲ存ス；中肋ハ上部ニ至ルニ從テ細クナリ，頂端ニ達セザル前ニ不明トナル．　中肋ノ兩側ヨリ側脈ヲ對生ス；側脈ハ殆ド其起點ヨリ多數ノ微細ナル細脈ニ分レ，緣邊ニ近ヅクニ從テ肉眼ニ見ルベカラザルニ至ル．　葉片ハ老成スル時ハ極メテ罕ニ單葉ニシテ分裂セザルコトアレドモ，通常兩緣ヨリ中肋ノ方ニ斜ニ裂ケテ數多ノ裂片トナリ，其缺刻往々中肋ニ達ス．　裂片ハ其幅大小不同ニシテ別ニ一定ノ順序ナシ．　葉片ハ，注意シテ分裂片ヲ擴グル時ハ，大ナル卵圓形ニシテ甚ダシクたばこノ葉ニ類シ，長サ 30-70 cm. 幅 20-50 cm. アリ．

體ノ構造．中肋ヲ橫斷スル時ハ中心ニ一ノ中軸アルヲ見ン．　此中軸ハ圓柱狀細胞ノ縱ニ列ナリテ成レルモノニアラズシテ，多數ノ短カキ絲狀細胞ヨリ成リ，密ニ相集リテ固着シ，極メテ不規則ニ團集ス．　中軸ノ周圍ニハ縱ニ排列セル圓柱狀細胞ノ厚キ一層アリテ，其細胞ノ大サハ大小一樣ナラズ．

此層ノ外部ニ大ナル中空ナル「パレンキマ」細胞ノ薄キ一層アリテ漸次表面ノ方ニ大サヲ減ジ，一二層ノ皮層細胞ヲ以テ蔽ハル．　「パレンキマ」細胞ノ膜壁ハ厚クシテ，水ヲ吸收スル時ハ甚シク膨脹ス．　表皮細胞ハ之ヲ表面ヨリ見レバ多角形ナリ．　莖ノ構造ハ全ク太キ中肋ト同ジク，唯「パレンキマ」細胞ノ小ナルヲ異ナリトス．　莖ノ中心部ハ往々老成スルニ隨テ破壞シ，空虛トナルコトアリ．　膜部ノ細脈ノ構造ハ中肋ト大體同一ナリ．　葉片ノ脈ナキ部分ハ三層ノ細胞ヨリ成ル：髓層ハ絲狀細胞ヨリ成リ，各方面ニ其枝ヲ出スヲ以テ錯綜ス；中層ハ數個ノ空虛ニシテ大ナル「パレンキマ」細胞ヨリ成リ，一二層ノ表皮細胞ヲ以テ蔽ハル．　輝々タル內容物ヲ含メル圓キ細胞皮層中ニ平等ニ散在ス．　體ノ伸長スル方法ハ極メテ幼キ標品ヲ獲ザルヲ以テ今之ヲ詳ニセズ．

生殖法：「ガメート」嚢ハ一列ノ細胞ヨリ成レル毛ヨリ變成シ，此毛ハ一個ノ表皮細胞ヨリ伸出ス，而シテ單條ニシテ決シテ分岐スルコトナク，中性ノ毛ト同一ノ性質ナリ．　然レドモ，實ヲ生ズル毛ハ其伸長ニ限リアレドモ，中性ノ毛ハ基部ノ細胞ノ分裂ニヨリテ無限ニ伸長ス．　ガメート嚢ヲ生ズル毛ハ短クシテ，頂端ニ近キ數個ノ細胞ハ橫ニ分裂シテ數個ノ小細胞ヲナシ，以テ「ガメート」嚢ノ基ヲナス，然レドモ下部ノ細胞ハ別ニ變化スルコトアラズ．　子嚢トナルベキ部分ノ細胞ハ次ニ縱ニ分裂シテ二縱列ヲナシ，以後數回縱橫ニ分裂シテ「ガメート」嚢ヲ形成ス；其充分ニ形成セラレタルモノハ圓柱狀—卵形又ハ長楕圓形ナリ，而シテ圓柱狀細胞ノ縱ニ連ナレル柄ヲ存ス．　此柄ヲ作レル細胞ノ數ハ 2-6 個ニシテ或ハ夫以上アリ．　中性ノ毛ノ長サハ 203-384 μ ニシテ幅 8.5-13 μ ヲ有シ，「ガメート」嚢ノ長サハ 38-53 μ ニシテ幅 13-15 μ アリ，而シテ，「ガメート」嚢ト柄トヲ合シタル全體ノ長サハ 43-114 μ アリ．斯クテ，「ガメート」嚢ハ數條ノ中性毛ト混在シ，其ニ不規則ナ

ル圓形ノ班點即チ子嚢群ヲナス; 群ハ一定ノ區劃ナシ. 「パラチマタ」及ビ游走子嚢ハ今詳ナラズ.

色及質. 色ハ新鮮ノ時ハ美シキ栗色ナレドモ,海ヨリ取出サルヽヤ否ヤ淡キ黄綠色ニ變ジ,或ハ多數堆積スル時ナドハ不快ナル青綠色ヲナス; 其斯ノ如キハ蓋シ腐敗ニ依ルモノナルベシ. 之ヲ乾燥スル時ハ黄綠色トナル. 此植物ハ少シク酸キ澁キ味ヲ有ス. 質ハ新鮮ノ時ハ硬キ膜質ニシテ稍脆ケレドモ,速ニ柔靭トナル. 乾燥スル時ハ,極メテ薄クシテ紙ノ如クナリ,臺紙ニ付着セズ.

備考: 始メ予ハ本植物ノ體ノ大ナルト「ガメート」嚢ノ性質ノ奇ナルトニ依テ之ヲ新屬ト考ヘ,予ノ日本藻類名彙 p. 121 ニハ Tabacopsis acetosa ノ名ヲ以テ,之ヲ Desmarestiaceae ノ亞科 Tabacopsideae 中ニ置ケリ. 然レドモ,後,其體色ヲ變ズルコト,其澁キ酸味ヲ有スルコト,並ニ其中肋及ビ側脈ヲ有スルコトヽヨリ推シテ,Desmarestia 屬ノ一種ナラント思惟セリ; 元來該屬ノ體ノ伸長法ハ頂毛成長ナレドモ,今本植物ニテハ之ヲ詳ニセザルガ故ニ,幾分不明ノ點アルヲ免カレズト雖モ,該屬ノ他ノ種ト比較シテ之ヲ本屬ニ編入スルニ至レリ. 由來此科ノ植物ニ就テハ,生殖器ノ性質未ダ充分明ナラズ,其今日マデ Desmarestia 及 Arthrocladia ノ某々種ニ就テ知ラレタルモノハ,皆單子嚢即チ游走子嚢ノミニシテ,未ダ「ガメート」嚢即チ複子嚢ノ知ラレタルモノアラズ. 故ニ,今若シ,予ノ査定ニシテ誤ナシトスレバ,此科ノ植物ノ生殖器ニ就テ一ノ光明ヲ與ヘタルモノト云フベシ.

本植物ハ其酸味アル成分ヲ有スル爲メ漁人ハ之ヲすぐるト稱シ,網絲ノ色ヲ脫色シ,魚其他魚介類ヲ斃死セシメ,他ノ海藻ヲ害スル等頗ル有害ナルヲ以テ,偶々其採集物中ニ之ヲ混ズルアレバ直チニ取リ棄ルヲ常トス.

第XXXVIII圖版. **1**: 子嚢群, *s*, *s* ヲ有スル Desmarestia tabacoides Okam. n. sp., たばこぐさ, ノ體, $\frac{1}{3}$.—**2**: 中性ノ毛, $\frac{350}{1}$.—**3**: 體ノ横斷面ノ一部ニシテ,二個ノ「ガメート」嚢ト中性ノ毛, *h*, *h*, トヲ示ス, $\frac{600}{1}$.—**4**: 「ガメート」嚢形成ノ順序; *a*, $\frac{220}{1}$; *b-d*, $\frac{600}{1}$.

第XXXIX圖版, 9-13圖. **9**: 太キ中肋ノ横斷面ノ一部; *a*, 中軸; $\frac{50}{1}$.—**10**: 中軸ノ縦斷面, $\frac{220}{1}$.—**11**: 同上ノ横斷面, $\frac{220}{1}$.—**12**: 一條ノ細脈ヲ有スル葉片ノ横斷面ノ一部, $\frac{90}{1}$.—**13**: 葉片ノ膜部ノ髓部ヲ形成スル絲狀細胞, $\frac{220}{1}$.

Catenella Opuntia (Good. et Woodw.) Grev.

Nom. Jap.: *Iso-mokkwa.*

PL. XXXIX, Fig. 1-8.

Catenella Opuntia (*Good. et Woodw.*) *Grev. Alg. Brit. p. 166, t. 17*; Harv. Phyc. Brit. tab. 88; Kuetz. Sp. Alg. p. 724; Id. Tab. Phyc. Vol. XVI, t. 71; J. Ag. Sp. Alg. II, p. 352; Id. Epicr. p. 588; Hauck Meeresalg. p. 186, f. 80; Ardiss. Phyc. Medit. Vol. I, p. 296; De Toni Syll. Alg. IV, p. 318; 岡村, 日本藻類名彙 p. 33.—*Fucus Opuntia Good. et Woodw. in Linn. Transact. III, p. 219*; Turn. Hist. Fuci t. 107.

Hab.: Riukiu (Col. Kuroiwa).

PL. XXXIX, Fig. 1-8. Fig. **1**: fronds of *Catenella Opuntia* (G. et W.) Grev. in nat. state and size.—Fig. **2**, *a-c*: pieces of fronds detached, $\frac{1}{1}$.—Fig. **3**: portion of frond magd.; *r*, *r*, roots, $\frac{10}{1}$.—Fig. **4**: attaching organ formed near the apex of a branch, $\frac{91}{1}$.—Fig. **5**: growing apex of frond, $\frac{600}{1}$.—Fig. **6**: cross-section of frond, $\frac{91}{1}$.—Fig. **7**: portion of the cross-section of frond; *c*, the axis; $\frac{340}{1}$.—Fig. **8**: longitudinal section of frond, $\frac{220}{1}$.

Catenella Greville 1830.

いそもくくわ属.

CYSTOCLONIEAE (RHODOPHYLLIDACEAE).

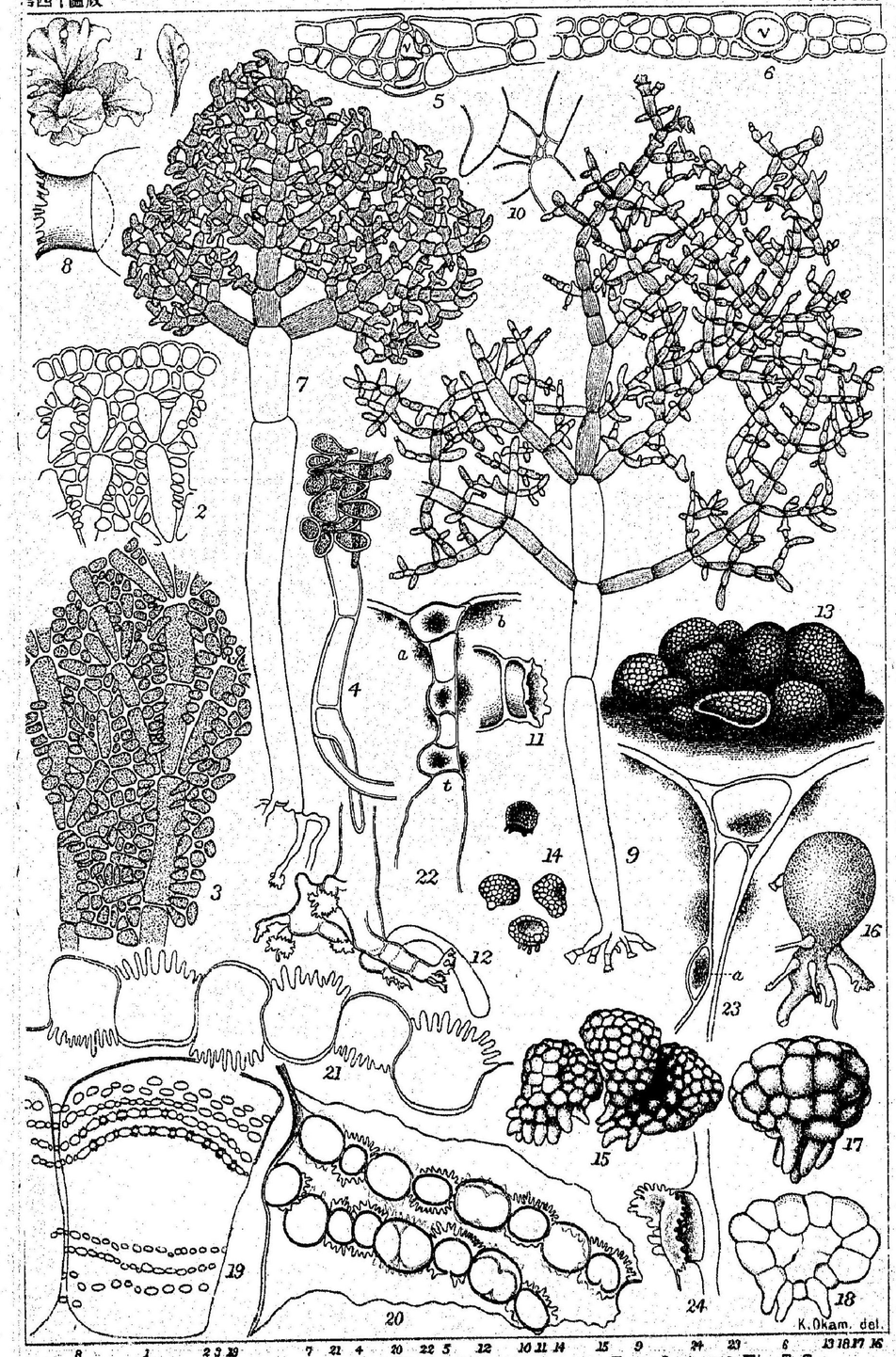
シストクロニウム亜科(とさかのり科).

體ハ圓柱狀,屢々クビレテ鎖狀ニ關節シ,節間部ヨリ枝ヲ副出シテ分岐シ,各部殆ド中空ノ如クシテ緩ク組織セラレ,明ニ絲狀組織ヨリ成ル;即チ:體ノ內部ニ一條ノ中軸アレドモ往々他ノ絲狀細胞ト混ジテ不明ナルコトアリ,此中軸ヨリ各方面ニ出ル枝ハ屢々不規則ニ叉狀ニ分岐シ,緩ク錯綜シテ體腔ヲ走リ,外方ニハ相集リテ皮層ヲナス. 體ノ成長點ハ互ニ斜ニ關節セル細胞ヨリ成ル.——四分胞子嚢ハ特ニ之ヲ生ズベキ節間部ニ限ラレテ其皮層中ニ生ジ,環狀ニ分裂ス. 嚢果ハ通常,短クナリタル末端ノ節間部ニ一ツヅヽ形成セラレ,其部ノ全部若クハ上部ノミヲ占ム;仁ハ甚シク膨大シテ髓層ニ懸リ,其部ノ細胞ハ太クシテ甚シク弛緩シ,之ヲ包圍スル絲組織ナシ;而シテ仁ノ內部ハ厚キ密ナル絲組織ヨリ成リテ,其周圍ニ胞子層ヲ形成ス;成胞絲ハ小總房狀ニ分岐シ,其枝ハ周圍ノ弛緩セル組織中ニ分派シ,仁ノ中心ヨリ周圍ノ方ニ放射狀ニ出デ,其末端ノ細胞胞子トナリ,以テ空球狀ノ胞子層ヲナス,此層ハ只下部ノミ連續セズ;果皮ハ體ノ外層ノ隆起シタルモノヨリ成リ,甚シク緩クナリタル表皮ノ內層ヲ以テ仁ヨリ離レ,稍不明ナル果孔ヲ其頂端若クハ斜ニ側面ニ開ク.

四五種アリテ專ラ濠洲,ブラジル,ボルネヲ等ニ產ス. 模範種ハ此處ニ圖說シタルモノニシテ,殆ド各地ノ暖キ海ニ分布ス.

屬ノ名ハ Catena (鎖) トella (小サキ意) トヨリ成ル,即チ體形恰モ鎖狀ニ連ナレルニ依ル.

第四十圖版　PL. XL.



Anadyomene Wrightii Harv. うきおりさう, Fig. 1-6. Struvea tenuis Zanard. あみは, Fig. 7-8.
Struvea delicatula Kuetz. さいのめあみは Fig. 9-12.

Catenella Opuntia (Good. et Woodw.) Grev.

いそもくくわ　岡村稱.

第 XXXIX 圖版, 1-8 圖.

體ハ 1-3 cm 高キ枕狀ノ叢ヲナシ, 下部絲狀ニシテ, 匍匐シ, 根ヲ出シテ他物ニ固着シ, 上方ニ枝ヲ擬出ス. 枝ハ圓柱狀又ハ扁壓, 各部同一ノ幅ニアラズシテ 0.5-1 mm. ニ達シ, 所々其五分ノ一程ノ細サナル所モ罕ナラズ, 而シテ關節狀ヲナシテ多少著シククビレ, 二乃至三叉狀ニ分岐シ, 此他往々小サキ枝ヲ存ス. 枝ハ往々結節部ヨリ出デ, 展開シ, 間々各方面ニ屈曲ス, 而シテ細キ枝ハ絲狀ニシテ結節明ナラザルコトアリ. 枝端ハ尖銳又ハ鈍圓ナリ. 節間部ハ稍長ク, 倒卵形, 棍棒狀, 長楕圓形, 紡錘狀等ニシテ其太サノ 2-10 倍長シ. 四分胞子嚢及ビ嚢果ハ今之ヲ得ズ. 質ハ膜質. 色ハ暗紫色又ハ紅褐色ナリ.

產地: 潮線間ノ岩石上ニ匍匐ス. 琉球(黑岩氏).

分布: 太西洋, 地中海及アドリアチック海, ニウジーランド, パタゴニア, チリー.

和名ハ節間部ノ形狀我邦ノ紋所ナルもくかうニ類スルモノアルニ依テ予ノ命ジタル所ナリ.

第 XXXIX 圖版, 1-8 圖. **1**: Catenella Opuntia (Good. et Woodw.) Grev., いそもくくわノ叢, 自然大.—**2**, *a-c*: 分離シタル體ノ片々, $\frac{1}{1}$.—**3**: 體ノ一部; *a*, 根; $\frac{10}{1}$.—**4**: 枝ノ頂端ニ近ク付着器ヲ形成シタルモノ, $\frac{91}{1}$.—**5**: 體ノ成長點細胞, $\frac{600}{1}$.—**6**: 體ノ橫斷面, $\frac{91}{1}$.—**7**: 體ノ橫斷面ノ一部; *c*, 中軸, $\frac{340}{1}$.—**8**: 體ノ縱斷面, $\frac{220}{1}$.

Anadyomene Wrightii Harv.

Nom. Jap.: *Uki-ori-sō.*

PL. XL, Fig 1-6.

Anadyomene Wrightii Harv. in Gray's Journ. of Bot. 1866 p. 48, t. 44, f. 5: J. Ag. Till Alg. Syst. VIII, p. 124; De Toni Syll. Alg. I, p 367; Heydrich Beitr. z. Kenntn. d. Algenfl. v. Kaiser-Wilh.-Land, (Ber. d. deut. bot. Gesellsch., 1892, Bd. X) p. 461. Taf. XXIV, f. 1-5; 岡村, 日本藻類名彙 p. 194.

Hab.: Ogasawarajima (Col. Matsumoto); Riukiu (C. Wright).

PL. XL, Fig. 1-6. Fig. **1**: fronds of *Anadyomene Wrightii* Harv., $\frac{1}{1}$.—Fig. **2**: marginal portion of frond, $\frac{80}{1}$.—Fig. **3**: surface-view of median portion of frond, $\frac{80}{1}$.—Fig. **4**: lower, rooting portion of frond showing lower intervening cells, $\frac{80}{1}$.—Fig. **5-6**: cross-sections of frond; *v*, *v*, veins, $\frac{80}{1}$.

Anadyomene Lamouroux 1812.

うきおりさう屬.

CLADOPHORACEAE (Oltmanns 氏ニ依ル). しほぐさ科.

體ハ葉狀ニシテ,網狀ノ目ヲ有セズ,全緣若クハ分裂シ,往々數多ノ葉一個ノ短莖ヲ有シ,許多分岐セル根ヲ以テ他物ニ固着ス. 體ヲ構成スル細胞ハ二種ニシテ,一ハ長卵形又ハ圓柱狀若クハ棍棒狀細胞ニシテ體ノ中肋ヲ形成シ,一ハ短キ,卵形,多角形又ハ圓形細胞ニシテ,往々多少裂片ヲ有スルモアリ;此短キ方ノ細胞ハ中肋ノ兩側ニ恰モ羽狀ヲナシテ橫ニ整列シ,中肋ト中肋トノ間隙ヲ塡充ス;而シテ恰モ中肋間ニ橫木ヲ設ケタル如クナリテ往々二層ヲナス;時ニ中肋ノ上迄モ蔽ヒ隱ルコトアリ;又別ニ多角形ノ細胞ヨリ成レル一層ノ表皮ヲ以テ蔽ハルヽモノアリ. 此等中肋間ノ小細胞ノ內容同時ニ多數ニ分裂シテ游走子ヲ生ジ,其細胞膜ノ中央ニ圓キ孔ヲ開キテ脫出ス.

熱帶ノ海ニ6-7種アリテ,オーストラリアノ海岸,印度洋及地中海ノ沿岸ニ產ス.

備考: 本屬ノ分類上ノ位置ニ就テハ從來多數ノ學者ハ之ヲ Valoniaceae 科ノ亞科 Anadyomeneae 中ニ置キタレドモ,近頃 Oltmanns 氏ハ氏ノ Morphologie und Biologie der Algen Vol. I, p. 259 ニ之ヲ Cladophoraceae 中ニ置キタリ. 由來 Valoniaceae ニ屬スル植物ハ其特徵ノ確固タルモノ明ナラズシテ,或ハ細胞ノ分裂面時計皿ノ如キ寄狀ヲナスヲ特徵トシ,或ハ tenaculum ト稱スル付着器ヲ有スルヲ以テスル等一定ナラザリシガ故ニ,種々ナル植物ヲ包含セリ. 今予ハ Oltmanns 氏ノ所說ヲ贊シ之ヲ此科ニ置クモノナリ.

屬ノ名ハ ana (上方ニ) ト dyo (間ニ入ル) トヨリ成ルト云フ.

Anadyomene Wrightii Harv.

うきおりさう　岡村稱.

第XL圖版, 1-6圖.

體ハ花形ノ叢ヲナシ,葉狀ニシテ,充分ニ成長スル時ハ腎臟形ニ擴ガリ,(予ノ有スル標品ニテハ約2 cm. 程ノ高サヲ有ス) 波狀ニ縮皺シ分裂ス. 葉片ハ皮層ヲ以テ蔽ハルヽコトナク,掌狀ニ列セル3-5條ノ圓柱狀又ハ稍棍棒狀ノ中肋ヲ有シ,其鈍圓ナル頂端ヨリ更ニ同樣ニ分岐シ,其長サハ其徑ノ3-5倍ニシテ,橫ニ數個ノ細胞ニ分裂スルコトアリ,而シテ肋間細

胞(intervening cells ノ譯)ハ横ニ長楕圓形ヲナシ,漸次分裂シ,概チ圓形—多角形ヲナス.

産地: 小笠原島(松本氏); 琉球(C. Wright).

分布: ニウギニア(Schneider, Heydrich).

備考: 肋間細胞ノ形成セラルヽ方法ニ就テハ未ダ充分明ナラズ; 勿論中肋細胞ノ側面ヨリ之ヲ分裂シ,其一且斯ノ如クシテ形成セラレタルモノ更ニ繼續分裂シテ遂ニ肋間ヲ塡ムルコトハ明ナリト雖ドモ, Heydrich 氏ハ上記ノ Beitr. z. Kenntn. d. Algenfl. v. Kaiser-Wilh.-Land p. 461, Taf. XXIV, f. 1-5 ニ於テ,氏ノ見ル所ヲ論ゼリ;氏ハ其1-4圖 *b* ニ示ス如ク,肋間細胞ハ(少ナクトモ体ノ下部ナル根ノ付近ニアル)中肋細胞ヨリ分裂スルニアラズシテ此植物ノ「アキチート」胞子ガ此處ニ付着發芽スルニヨルニアラズヤトノ說ヲ持セリ. 蓋シ氏ヲシテ斯ノ如キ考ヲ懷カシメタルモノハ,此處ニ予ノ第4圖ニ示ス如ク,根ノ付近ニアル肋間細胞ガ多少根ノ如キ裂片ヲ有スルヲ以テナリ. 然レドモ, Oltmanns 氏ノ上記ノ書ニハ Heydrich 氏ノ此說ヲ引用セザルヲ以テ,或ハ氏ノ說ハ信ヲ措クニ足ラザルカ;暫ク記シテ疑ヲ存シ,以テ他日ノ研究ニ資ス.

第XL圖版, 1-6圖. **1**: Anadyomene Wrightii Harv., うきおりさう, ノ自然ノ狀態, $\frac{1}{1}$.—**2**: 體ノ緣邊, $\frac{80}{1}$.—**3**: 體ノ中央部ノ表面, $\frac{80}{1}$. —**4**: 體ノ下部ノ根ヲ形成スル部分ニシテ其部ノ肋間細胞ハ中肋細胞ノ上ニ懸リ,恰モ「アキチート」胞子ガ萌發シテ根ヲ生ジタル如キ裂片ヲ有スルモノ, $\frac{80}{1}$.—5-6: 體ノ橫斷面; 5, 6, 中肋 $\frac{80}{1}$.

Struvea tenuis Zanard.

Nom. Jap.: *Ami-ita.*

PL. XL, Fig. 7-8.

Struvea tenuis Zanard. Phyc. Papuanae n. 17. in Nuovo Giorn. Bot. Ital. 1878, p. 39; Murray et Boodle A Str. and Syst. Account of the genus Struvea (Ann. of Bot. Vol. II, 1888-89.) p. 281, n. 5, t. 16, f. 5; De Toni Syll. Alg. I, p. 366; 岡村, 日本藻類名彙 p. 192.

Hab.: On *Digenea simplex* growing between tide-marks. Riukiu (col. Kuroiwa).

Remarks: As the specimen before us has 3-4 times pinnate reticulation instead of bipinnate, I am in some doubts in referring the present plant to this species. A young from of *S. delicatula?*

PL. XL, Fig. 7-8. Fig. **7**: frond (3-4 times pinnate) of *Struvea tenuis* Zanard., $\frac{18}{1}$.—Fig. **8**: tenaculum $\frac{600}{1}$.

Struvea Sond. 1845.

あみは屬.

SIPHONOCLADIACEAE (Oltmanns 氏ニ依ル). シフホノクラダス科.

體ハ一條ノ單條又ハ分岐セル莖ヲ有シ,莖ノ下部ハ根ヲ以テ立ツ; 根ハ複細胞ヨリ成リ不規則ニ分岐ス. 莖ハ上方ニハ恰モ中肋ノ如クナリテ體ヲ貫通スルモノニシテ,一個ノ細胞ヨリ成リ,强キクビレヲ呈ス,故ヲ以テ宛モ環ヲ連ヌタル如ク見ユ. 體ノ上部ハ團扇狀ニシテ,殆ド直角ニ且三叉狀ニ屢分岐シテ互ニ癒着セル絲狀細胞ノ網狀ニ連ナレルモノヨリ成リ,此部ノ細胞ハ一ノ平面ヲナシテ列シ,各枝ニ一個ノ

横膜ヲ形成ス. 第一位ノ枝ノ上端ハ前即チ莖ノ頂端ノ方ニ屈曲シ,次ナル其ト同樣ノ枝ト癒着ス;此ヲ以テ葉片ノ緣邊ハ緣ヲ縫ヒタルガ如キ觀ヲ呈ス. 總テ各部ノ癒着ハ「テナキユラ」ト稱スル付着器ヲ以テス. 生殖細胞ハ知ラレズ.

約六種ノ海ニ産スルモノアリテ,オーストラリア,ニウカレドニア,メキシコ灣及カナリー諸島等ニ專ナリ.

本屬モ從來Valoniaceae 科ノ Anadyomeneae 亞科中ニ置カレタレドモ,今 Oltmanns 氏ノ說ニ從テ Siphonocladiaceae 中ニ置クモノナリ. 屬ノ名ハ H. de Struve 氏ノ名譽ノ爲ニ設ケタルモノニシテ,氏ハ中世紀時代ニ獨逸ノ「ハムブルヒ」,「ブレーメン」附近ニ存シタル Hanseatic 聯邦ヘ露西亞ヨリ使シタル使臣ニシテ博物學ノ保護者タリシ人ナリ.

Struvea tenuis Zanard.

あみは　岡村稱

第XL圖版,7-8圖.

體ハ極メテ小ニシテ短キ莖ヲ有ス(予ノ標本ニテハ全體約0.5 cm アリ). 莖ハ平滑ニシテ環狀ノクビレナク,且分岐スルコトナク葉片ニ近キ所ニ一ノ横膜ヲ有ス. 葉片ハ美シキ絲ニシテ,心臟形—卵形,乃至三角形等ヲナシ,極メテ纖弱ニシテ,2.5-3 mm. ノ長サ並ニ幅ヲ有ス. 葉片ノ絲狀細胞ハ二回羽狀(予ノ標品ニテハ三回羽狀ナリ)ニシテ,枝及ビ小枝ハ對生ス;節間ノ長サハ徑ノ2-3倍ナリ.

產地: 潮線間ニ生ズルまくりノ體上ニ在リ. 琉球(黑岩氏).

分布: ニウギニア.

備考: 此處ニ圖說シタル標品ニ於テ網狀部ハ 3-4 回羽狀ニ分岐シタル細胞ニテ成ル. 此點ハ本種ノ二回羽狀ニテ成レルト云フ性質ト一致セザルモノアルヲ以テ或ハ本植物ヲ此種トスルノ誤ナランカヲ思ハシム. 或ハ次ニ圖說セル S. delicatula ノ幼キモノナランカ.

第XL圖版,7-8圖. **7**: Struvea tenuis Zanard., あみは,ノ體, $\frac{18}{1}$.—**8**: テナキユラ, $\frac{600}{1}$.

Struvea delicatula Kuetz.

Nom. Jap.: *Sainomé-amiha.*

PL. XL, Fig. 9-12.

Struvea delicatula Kuetz. Tab. Phyc. XVI, t. 2, f. 2; Murray et Boodle A Str. and Syst. Account of the gen. Struvea (Ann. of Bot. Vol. II, 1888-89), p. 281, n. 6, t. 16, f. 6 and 8; De Toni Syll. Alg. I, p. 366; 岡村, 日本藻類名彙 p. 192.—*Cladophora? anastomosans* Harv. Phyc. Austr. t. 101.

Hab.: Entangled on other algae growing between tide-marks. Riukiu.

PL. XL, Fig. 9-12. Fig. **9**: frond of *Struvea delicatula* Kuetz., $\frac{18}{1}$.—Fig. **10**: attachment of ramuli by tenacula, $\frac{54}{1}$.—Fig. **11**: a tenaculum, $\frac{330}{1}$.—Fig. **12**: basal portion of stem, $\frac{54}{1}$.

Struvea delicatula Kuetz.

さいのめあみは　岡村稱.

第XL圖版, 9-12 圖.

體ハ不規則ニ分岐錯綜セル絲狀ノ匍匐セル部分ヨリ立ツ. 體ハ叢生シ, 環狀ニクビレザル平滑ナル莖ヲ有シ, 莖ハ單條又ハ分岐シ, 1-2 cm 長ク; 葉片ハ卵形又ハ三角形ノ網ニシテ, 全體ニテ 2.6-5 cm 長シ. 葉片ヲ構成スル絲狀細胞ハ正シク中肋ノ兩側ヨリ出デヽ數回羽狀ヲナシ, 枝皆對生ス, 而シテ直角ニ出デ, 其處此處ニ不規則ニ癒着ス. 關節ノ長サハ概ネ其徑ノ 2-3 倍ナリ. 色ハ美キ淡綠色ニシテ, 質ハ新鮮ノ時ハ硬ク, 乾燥スル時ハ紙ニ付着セズ.

(予ノ得タル標品ハ稍破損セル極メテ小ナルモノナルガ故ニ上記ノ記載ハ參考書ノ記ス所ニ依レリ).

產地: 潮線間ニ生ズル他ノ海藻ト混在セリ. 琉球(黑岩氏); 臺灣南岸, Long-Kiau (Warburg, Heydrich).

分布: グアデループ, セーロン, オーストラリア, ニウカレドニア, シヤム灣.

第XL圖版, 9-12 圖. **9**: Struvea delicatula Kuetz., さいのめあみは, ノ體, $\frac{18}{1}$.—**10**: 「テナキユラ」ヲ以テ小枝ノ互ニ癒着スル狀, $\frac{54}{1}$. **11**: テナキユラ, $\frac{300}{1}$.—**12**: 莖ノ下部, $\frac{54}{1}$.

Dictyosphaeria favulosa (Mert. ?) Decsne.

Nom. Jap.: *Kikko-gusa.*

PL. XL, Fig. 13-24.

Dictyoshphaeria favulosa (*Mert.?*) *Decaisne Class. des Alg. Calcif. p. 32*; Harv. Ner. Bor.-Amer. III, p. 50, t. 44, B; Kuetz. Sp. Alg. p. 512; Id. Tab. Phyc. Vol. VII, t. 25, 1; J. Ag. Till Alg. Syst. III, p. 118; Askenasy Gazelle p. 8, Taf. II, f. 1-5; Heydr. Beitr. z. Kenntn. d. Algenfl v. Kais.-Wilh.-Land (Ber. d. d. bot. Gesells., Bd. X) p. 466, Taf. XXIV, f. 6-10, Taf. XXV, f. 11-13; 岡村, 日本藻類名彙 p. 191.

Hab.: On rocks between tide-marks. Riukiu, Hiuga, Nogama Isl. in Amakusa Isls., Cape Nomo (Prov. Hizen), Urado and Kashiwajima (Prov. Tosa), Abu (Prov. Awa), Kushimoto (Prov. Kii), Hamashima (Prov. Shima), Tago (Prov. Idzu).

PL. XL, Fig. 13-24. Fig. **13**: fronds of *Dictyosphaeria favulosa* Decsne. from Riukiu, in nat. state and size.—Fig. **14**: same from Abu in Prov. Awa (col. K. Yendo), $\frac{1}{1}$.—Fig. **15**: one of fronds set free and other two coalesced together, $\frac{5}{1}$.—Fig. **16**: one of smaller fronds magd., showing root-like attaching organs, $\frac{54}{1}$.—Fig. **17**: very young frond, 2 mm. in height, $\frac{8}{1}$.—**Fig. 18**: longitudinal section of the same, showing the decay of inner cells, $\frac{8}{1}$.—Fig. 19. surface-view of two cells of frond seen from the inner side through the wall, showing the arrangements of tenacula, $\frac{54}{1}$.—Fig. **20**: portion of the same magd., $\frac{300}{1}$.—Fig. **21**: mode of attachment of 2 cells of frond by the formation of tenacula from outer surfaces of both cells, $\frac{600}{1}$.—Fig. **22**: two cells, *a* and *b*, of a frond coming into cohesion by forming three tenacula, *t*, still leaving spaces between both cells, $\frac{220}{1}$; two cells are apart from each other at the distance of 20 μ.—

Fig. **23**: similar case as in Fig. 22, showing the beginning of a young tenaculum, *a*, $\frac{600}{1}$.—Fig. **24**; a tenaculum, $\frac{390}{1}$.

Dictyosphaeria Decaisne 1842.

きつかうぐさ屬.

CLADOPHORACEAE (?)　しほぐさ科(?)

體ハ石灰質ヲ被ムルコトナク,球狀又ハ不規則ナル塊狀ヲナシ,後往々破壞スル爲ニ殼狀トナリ又ハ膜狀ニ擴ガリ,根ノ如キ付着器ヲ以テ他物ニ固着ス.　始メハ數層ノ細胞ヨリ成リテ實質ナレドモ,後內部ノ細胞漸次死滅シ解頽スルニ依テ概ネ一層ノ細胞ヨリ成レルニ至ル;此細胞ハ多角形ニシテ多少外面ノ方ニ隆起ス.　又此外部ノ細胞ヨリ枝ナル細胞ヲ生ジ,此枝互ニ癒着シテ一ノ塊狀ヲナシ,後更ニ其內部ノ細胞解頽シテ中空トナル.　生殖法ハ詳ナラズ.

約三種アリテ熱帶ノ海ニ產ス;オーストラリア,太平洋諸島其主產地ナリ.

備考: 分類上ノ位置ニ就テハ,本屬ハ從來 Valoniaceae ニ置カレタリ;然レドモ Oltmanns 氏ハ Valoniaceae 中ニ置カレタル諸屬中 Anadyomene, Microdictyon, Boodlea, Rhipidiphyllon 等ヲ Cladophoraceae ニ移シ, Dictyosphaeria ハ Harvey, J. Agardh 等ノ大家等シク此處ニ列記シタル諸屬ト親緣アルコトヲ認ムルヲ以テ是モ亦 Cladophoraceae 中ニ收メタリ.　今氏ノ說ニ隨テ此科中ニ置ク;然レドモ未ダ一定シタルモノニアラズ,故ニ疑ヲ存ス.

近頃 Murray 及 Crosby ノ二氏ハ Dictyosphaeria ニ就テ左ノ如キ說ヲナスト Oltmanns 氏ノ藻類學書 p. 261 ニ引用セリ;即チ:—Schmitz 曰ク"D.ctyosphaeria favulosa ノ幼者ハ不規則ナル球狀體ヲナセル中實ナル細胞體ナリ……此細胞體ハ大ナル細胞ヨリ成リテ不規則ニ分岐セル細胞列ヲナシ,其下部ナル付着點

ヨリ上方ニ扇狀ヲナス;其各細胞ノ互ニ癒着シテ全體ヲ形成スルコト,恰モ大ナル細胞ヨリ成レル Cladophora ニ類シ,若クハ小サキ細胞ヨリ成レル Valonia ニ類ス……,而シテ其各細胞ハ極メテ小ナル付着細胞ヲ生ジテ互ニ癒着ス"—(以上ハ多分 C. M. Crosby Observation on Dictyosphaeria (Minnesota Bot. Studies 1903; 3 Ser. 1, p. 61) ノ一節ナラン).

屬ノ名ハ Dictyon (網) ト Sphaera (球) トヨリ成ル,即チ細胞ノ相集マレル狀恰モ網ノ如クナレバナリ.

Dictyosphaeria favulosa (Mert.?) Decsne.

きつかうぐさ　岡村稱.

第XL圖版, 13-24 圖.

體ハ多少不規則ナル球狀ニシテ,下部ノ細胞ヨリ根ヲ生ジテ他物ニ付着シ,多數相集合ス,徑 0.5-3 cm. アリ.　體ハ始メ球狀ニ團集セル實質ナル細胞體ニシテ,下部ノ細胞根ノ如キ突起ヲ生ジテ他物ニ付着ス;後內部ノ細胞ハ解頽シテ空虛トナル.　此空虛トナル頃ノ體ノ大サニ就テハ,第17-18圖ニ示シタル如ク,其大サ僅ニ2mmノ高サアルモノニ於テ既ニ然リトス;然レドモ他ノ學者ノ研究シタル所ヨリ見ルモ,之ヨリ遙ニ大ナル球ニテ多數ノ細胞ヨリ成レルモノヽ內部漸次空虛トナルモノアルヲ以テスレバ,必ズシモ予ノ見タル程小ナルモノニ於テ既ニ空虛トナルモノヽ如シト限レルニハアラザルベシ.　兎ニ角初メ實質ナル球モ後空虛トナリ,或ハ其一部破壞シテ鉢狀トナリ,或ハ殼狀トナル,而シテ斯ノ如キ體ハ概ネ一層ノ細胞ヨリ成レドモ,亦數層ノ細胞ヨリ成レルモノナキニアラザルガ如シ.　又斯ノ如キ狀態ニナリタル後,更ニ新規ノ部分ヲ生ジテ體ヲ增大スルコトモアリト見エタリ.　體ヲ構成スル細胞ハ只單ニ細胞膜壁ヲ以テ相接觸スル

ノミニアラズシテ，第22-23圖ニ示ス如ク，一細胞ヨリ「テナキユラ」トナルベキ細胞，a，ヲ分裂シ，此細胞其相隣レル細胞ニ付着シテ以テ相互ヲ結合ス．「テナキユラ」ノ生ズル狀ハ第19-20圖ニ示ス如ク，多少規則正シク横ニ數列ヲナシ，又第21圖ニ示ス如ク相隣レル細胞ヨリ交互ニ之ヲ生ズルヲ普通トス；時ニハ二三個相並ンデ一細胞ヨリ出ルコトナシトセズ．　色ハ新鮮ノ時ハ濃キ綠色ナレドモ生白キ閃光ヲ有スルヲ以テ淡青色ヲナス．　質ハ新鮮ノ時ハ極メテ硬ク，乾燥スル時ハ膜質トナリ，細胞ハ肉眼ニテ殆ド網ノ目ノ如ク見ユ．

産地：潮線間ノ岩石上ニ生ズ．　琉球，日向，天草野釜島，野母崎，土佐浦戸及柏島，阿波阿部(遠藤)，串本(遠藤)，志摩濱島，伊豆田子村尊ノ島(大石)．

分布：太西洋溫暖部，印度洋，太平洋．

第XL圖版，13-24圖．**13**：琉球産 Dictyosphaeria favulosa Decsne.，きつかうぐさ，ノ自然ノ狀態，$\frac{1}{1}$．—**14**：阿波國阿部産ノモノ(遠藤氏採)，$\frac{1}{1}$．—**15**：體ノ一ハ離レ，他ノ二個ハ互ニ癒着セルモノ，$\frac{5}{1}$．—**16**：小サキ體ノ一ヲ廓大シテ，根ノ如キ付着器ヲ示ス，$\frac{54}{1}$．—**17**：2 mmノ高サアル極テ幼キモノ，$\frac{8}{1}$．—**18**：同上ノ體ヲ縱斷シテ內部ノ細胞ノ破壞シ行ク狀ヲ示ス，$\frac{8}{1}$．—**19**：體ノ二個細胞ノ表面ヲ其內面ヨリ細胞膜ヲ透シテ見タルモノニシテ，「テナキユラ」ノ排列スル狀ヲ示ス，$\frac{54}{1}$．—**20**：同上ノ一部，廓大，$\frac{390}{1}$．—**21**：體ノ二個細胞ノ表面ヨリ互ニ「テナキユラ」ヲ形成シテ癒着スルモノ，$\frac{600}{1}$．—**22**：體ノ二個細胞，a トb，ガ三個ノ「テナキユラ」，b，ヲ形成シテ癒着スルモノ；二個細胞ハ尙ホ20 μノ距離ノ間隙ヲ存ス．—**23**：第22圖ト同樣ノモノニシテ，幼キ「テナキユラ」，a，ノ今將サニ成ラントスルモノ，$\frac{600}{1}$．—**24**：テナキユラ，$\frac{390}{1}$．

(Pl., XXXVI—XL: July, 1908).

新番地 牛込新小川町二丁目四番地 岡村金太郎

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品 第I-II帙 No. 1-100.

FASCICULUS I-II. No. 1-100.

Price (exclusive of postage) of every Fasciculus :—30mk. = 30 shill. = 37.5 fr. = $7,50.

Subscribers to be addressed to the auther: No. 4, Ni-chomé, Shin-Ogawa-machi, Ushigomé, Tokyo.

Foreign Agent: **Theodor Oswald Weigel,** Leipzig, Königsstr. 1, Deutschland.

各帙：金拾弐圓五十錢 (外ニ郵送料).

岡村金太郎:—東京牛込新小川町二丁目四番地 (口座 10936).

動物標本社:—東京神田五軒丁.

NOTICE.

Price (inclusive of postage) of the ICONES which contains 5 plates in every number is 3.50 MK. for abroad.

Remittances from abroad to be made by Postal Money Order, payable to

K. Okamura, No. 4, Ni-chomé, Shin-Ogawamachi, Ushigomé, Tokyo.

Z. P. Maruya & Co., 14-16, Nihonbashi Tōri Sanchōme, Tokyo.

Foreign Agent: **Theodor Oswald Weigel,** Leipzig, Königsstrasse 1, Deutschland.

定價： 各集圖版五枚ニ就キ壹部金壹圓 (外ニ郵稅)

明治四十一年七月廿日發行
明治四十一年七月廿五日印刷

不許複製

著作者兼發行者 岡村金太郎 東京牛込區新小川町二丁目四番地 振替貯金口座壹〇[redacted]番
印刷者 中村彌助 東京市京橋區日吉町十番地
印刷所 近藤商店活版部 東京市京橋區日吉町十番地
發賣所 丸善株式會社 東京市日本橋區通三丁目 大坂市心齋橋筋博勞町四丁目 振替貯金口座(東京五番大坂七四番)

日本藻類圖譜

第一卷 第九集

理學博士 岡村金太郎 著

ICONES OF JAPANESE ALGÆ.

Vol. I. No. IX.

BY

K. Okamura *Rigakuhakushi.*

Contents of No. IX. (Pl. XLI—XLV.)

Dudresnaya japonica Okam. sp. nov.	ひびらうど
Halicoryne Wrightii Harv.	いそすぎな
Bornetella capitata (Harv.) J. Ag.	みづたま
Udotea conglutinata (Soland.) Lamour.	はごろも
Udotea javensis (Mont.) Gepp.	ひめいてふ

Published

by

THE AUTHOR.

Nov., 1908.

Tokyo.

明治 41 12 4 内務

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品　第二帙

FASCICULUS II.

51. Porphyra suborbiculata Kjellm.
52. Batrachospermum moniliforme Roth.
53. Batrachospermum virgatum (Kuetz.) Sirod.
54. Batrachospermum Gallaei Sirod.
55. Yatabella hirsuta Okam.
56. Endocladia complanata Harv.
57. Gigartina Teedii (Roth) Lamour.
58. Gigartina intermedia Suring.
59. Eucheuma spinosum (L.) J. Ag.
60. Ceratodictyon spongiosum Zanard.
61. Gracilaria confervoides (L.) Grev.
62. Hypnea seticulosa J. Ag.
63. Hypnea Saidana Holmes.
64. Gastroclonium ovale (Huds.) Kuetz.
65. Erythrocolon Muelleri (Sond.) J. Ag.
66. Nitophyllum uncinatum (Turn.) J. Ag.
67. Caloglossa Leprieurii (Mont.) J. Ag. Var. continua Okam. Nov. Var.
68. Caloglossa ogasawaraensis Okam.
69. Acrocystis nana Zanard.
70. Polysiphonia fragilis Suring.
71. Pterosiphonia pennata (Roth) Fkbg.
72. Symphyocladia Marchantioides (Harv.) Fkbg.
73. Rhodomela Larix (Turn.) Ag.
74. Herposiphonia fissidentoides (Holmes) Okam.
75. Heterosiphonia pulchra (Okam.) Fkbg.
76. Ptilota pectinata (Gunn.) Kjellm. f. typica Kjellm.
77. Carpoblepharis Schmitziana (Rbd.) Okam.
78. Ceramium clavulatum Ag.
79. Microcladia corallinae (Mart.) Okam.
80. Campylaephora Hypnaeoides J. Ag.
81. Gloiopeltis cervicornis (Suring.) Schmitz.
82. Peyssonnelia caulifera Okam.
83. Corallina radiata Yendo.
84. Zonaria Diesingiana J. Ag.
85. Scytosiphon lomentarius (Lyngb.) J. Ag.
86. Endarachne Binghamiae J. Ag.
87. Cladosiphon decipiens (Suring.) Okam.
88. Cylindrocarpus rugosa Okam. Sp. Nov.
89. Leathesia difformis (L.) Aresh.
90. Mesogloea crassa Suring.
91. Chordaria abietina Rupr.
92. Ulva conglobata Kjellm.
93. Chaetomorpha crassa (Ag.) Kuetz.
94. Chaetomorpha spiralis Okam. Sp. Nov.
95. Caulerpa ambigua Okam.
96. Chlorodesmis comosa Bail. et Harv.
97. Codium adhaerens (Cabr.) Ag.
98. Rhipidiphyllon reticulatum (Ask.) Heydr.
99. Boodlea coacta (Dickie) Murr. et De Toni.
100. Brachytrichia Quoyi (Ag.) Born. et Flah.

NOTICE.

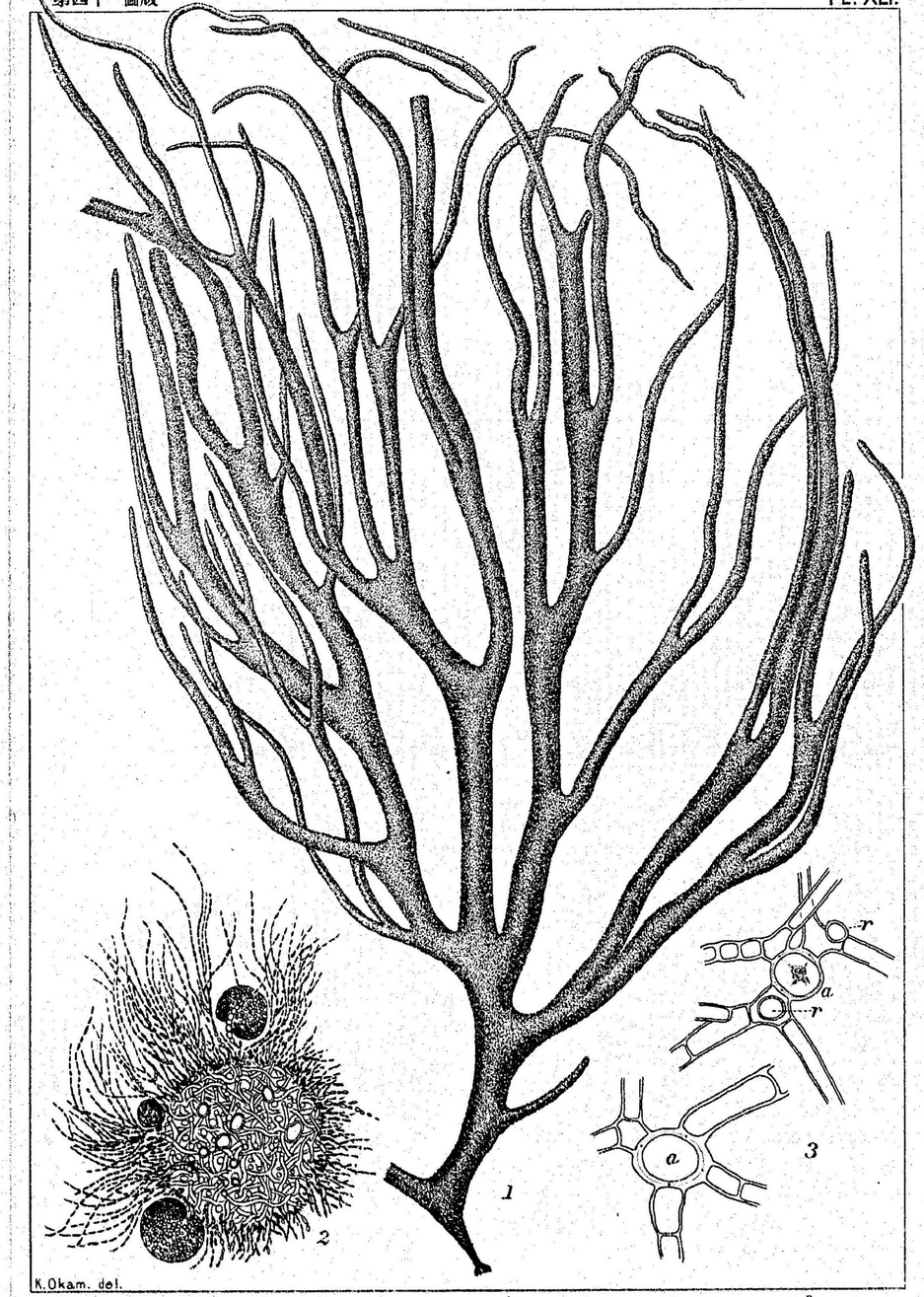
Price (exclusive of postage) of every Fasciculus:—30 mk.=30 shill.=37.5 fr.=$7.50.

Subscribers to be addressed to the author:

No. 4, Ni-chomé, Shin-Ogawamachi, Ushigome, Tokyo, Japan.

第四十一圖版

PL. XLI.

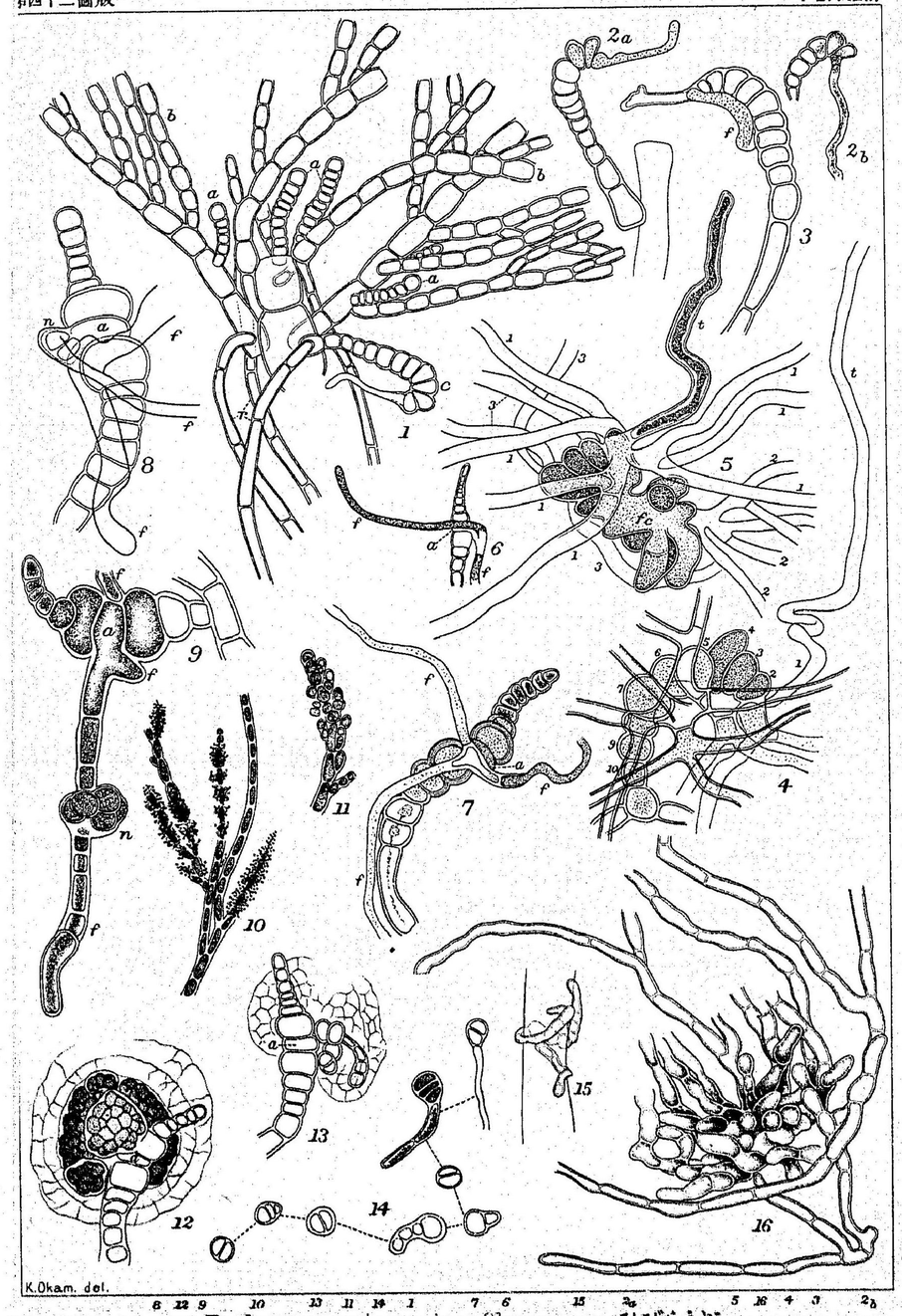


K. Okam. del.

2 1 3

Dudresnaya japonica Okam. on p. [illegible]

第四十二圖版 PL. XLII.



Dudresnaya japonica Okam. sp.n. ひびらうど.

Dudresnaya japonica Okam. sp. nov.

Nom. Jap.: *Hi-birōdo.*

PL. XLI-XLII.

Dudresnaya japonica Okam. 日本藻類名彙, p. 92.

Diagn. Fronds very lubricous, almost cylindrical throught the whole length or the lower portions often decidedly compressed, gradually or abruptly tapering below into a short stem, irregularly dichotomous, here and there with tri-polychotomous segments, 15-30 cm. high, 3-5 mm. broad in thicker part. Branches vermiform standing at some distances, rising from roundish or acute axils, gradually tapering above into slender and roundish apices. *Antheridia* transformed from the cells of articulations of the peripheral filaments. *Cystocarps* globular, slightly reniform, being placed near the base of peripheral filaments. Dioecious. *Tetraspores* unknown. *Colour* red.

Hab.: Probably in calm waters. Cape Nomo (Prov. Hizen), Futaye (Isl. Amâkusa), Prov. Shima, Prov. Sagami. Fruit:—Spring.

Development of Cystocarp: I have been able to study nearly all stages in the development of cystocarps from the procarp though without any attempt to observe the internal nucleal changes. In their general features, the fusion of the ooblastema filament and the auxiliary-cell and the subsequent development of cystocarps very much resemble those described and figured for *Dudresnaya coccinea* by Bornet and Thuret and by Oltmanns; more especially they resemble those which have recently been studied by Howe in *D. crassa* Howe Phycological Studies II, (Bull. Torr. Bot. Club, 32, 1905), p. 572, Pl. 28 and Pl. 29 fig. 12-26.

PL.XLI-XLV, Nov. 1908.

Carpogonial branch is simple, consisting of about 10 subspherical or somewhat discoidal cells (of which lower 3-4 cells are sterile) in a single series, its apex slightly deflexed and terminating in the much elongated, curved or nearly straight trichogyne. Some two cells mostly standing at the 4th to 5th from the carpogonium are larger than the remaining ones and are full of contents. Antheridia are produced on the plant different from that having procarps; that is the plant is dioecious. They are linear or slender, elongated fusiform in outline, being developed from the cells of articulations of the peripheral filaments.

After fertilization a longer or shorter process (fig. 3, *f*) is put forth from the carpogonium to fuse with some cells in the carpogonial branch. This fusion of cells proceeds in greater or less extent, as it is seen from fig. 3-5. The contents of cells thus fused become more homogenous and translucent. From the fused cell or cells thus formed very abundant, simple or branched and jointed ooblastema filaments are emitted.

Auxiliary cell-branches are very abundantly prepared, being composed of 5-9 cells slightly enlarged toward the base, and terminating in a multiarticulate prolongation similar to that of the other peripheral filaments or often remaing shorter. Auxiliary cell occupies the middle of the enlarged portion of the branch and has little more than half the diameter of the two immediately adjacent cells; the latter are very much inflated and rich in contents.

The union of the ooblastema filament set forth from the fused cell always takes place with a single definite and highly specialized auxiliary cell which lies between the two larger ones, as stated above. The contents of this cell appear at first very much like that of the adjacent cells, but as it matures, it undergoes a change, becoming more homogenous and translucent; at the same time, the auxiliary

cell and the two neighboring cells become enveloped in an especially thick layer of mucus as shown in fig. 7-8.

An ooblastema filament after having fused with an auxiliary cell again travels far more distance, by simple prolongation or by branching, to enter into union with still other ones (fig. 6-9). At the place where it comes in fusion with an auxiliary cell, spores are soon produced (fig. 8); and in rarer cases they are formed in the ooblastema filament at some distances from the auxiliary cell already acted upon (fig. 9).

In all the articulations of gonimoblastic filaments, carpospores are formed in succession forming a few nucleoli which are aggregated into a large globular or slightly reniform mass. When the carpospores are set free the wall of cells in which they were lodged appear like mucilaginous network.

Spores soon germinate often within the mother body even staying in cystocarp. After the division of spore as it is illustrated in fig. 14, irregularly branched filamentous embryos are formed which branching more and more form an aggregated mass from which numerous elongated branching filaments are emitted on all sides (fig. 16). Plant of this embryonal stage soon developes into a young frond.

Remarks: The present plant, which agrees in the character of auxiliary cell with *D. coccinea* (Ag.) Crouan and more especially with *D. crassa* Howe, is very much closely related to the latter in having the highly specialized auxiliary cell. It, however, differs from that species in having subpinnate ramification of the peripheral filaments and in the subdichotomous ramification of frond.

Pl. XLI. Fig. **1**: frond of *Dudresnaya japonica* Okam. sp. nov., $\frac{1}{1}$.—Fig. **2**: cross-section of frond, $\frac{54}{1}$.—Fig. **3**: axial cells, *a*, *a*, with verticillate branches; *r*, *r*, rhizoids; $\frac{390}{1}$.

Pl. XLII. Fig. **1**: peripheral filaments, *b*, *b*, verticillately arising from axial cells, showing the mode of construction of frond; *a*, *a*, beginning of auxiliary cell branches; *c*, carpogonial branch; *r*, zhizoids; $\frac{390}{1}$.—Fig. **2**: *a-b*, procarps, $\frac{390}{1}$.—Fig. **3**: carpogonium just fertilized; *f*, filamentous process set forth from the carpogonium going to fuse with some cells in the branch, $\frac{600}{1}$.—Fig. **4**: ooblastema filaments put forth from somewhat fused cells of the carpogonial branch, *1-10*; *t*, trichogyne; $\frac{600}{1}$.—Fig. **5**: fusion of the cells of the carpogonial branch, and ooblastema filaments; *fc*, fused cell; *1*, *2*, and *3* indicate respective groups of ooblastema filaments; *t*, trichogyne; $\frac{600}{1}$.—Fig. **6**: auxiliary cell, *a*, just united with an ooblastema filament, *f*, *f*, $\frac{220}{1}$.—Fig. **7**: similar case as fig. 6, showing thickened wall of cells of auxiliary cell-branches, $\frac{390}{1}$.—Fig. **8**: beginning of the development of nucleus, *n*, from a fertilized auxiliary cell, *a*; *f*, *f*, same as other figs.; $\frac{600}{1}$.—Fig. **9**: young nucleus developed on an ooblastema filament at some distance from the auxiliary cell, *a*, $\frac{600}{1}$.—Fig. **10**: antheridia, $\frac{220}{1}$.—Fig. **11**: development of young antheridia, $\frac{600}{1}$.—Fig. **12**: cystocarp; *a*, fertilized auxiliary cell; $\frac{390}{1}$.—Fig. **13**: carpospores germinated within cystocarp; *a*, same as fig. 12, $\frac{390}{1}$.—Fig. **14-15**: different stages of the germination of carpospores, $\frac{390}{1}$.—Fig. **16**: far more advanced stage of the embryo, $\frac{600}{1}$.

Dudresnaya Bonnemaison 1822.

ひびらうど屬.

DUMONTIACEAE. りうもんさう科.

體ハ概子圓柱狀，密ニ分岐シ，甚シク柔粘ニシテ，明ニ絲組織ヨリ成ル；即チ體ノ上部ハ關節セル細胞ヨリ成レル一條ノ中軸ヲ存シ，其頂端ハ横ニ分裂セル頂細胞トナリ，各方面ニ向テ

輪生枝ヲ發シ，輪生枝ハ外方ニ向テ屢々種々ニ分岐シ以テ皮層枝ヲ形成ス；此皮層ノ枝 綴ク相結合シテ以テ皮層ヲ成ス. 皮層ヲ成セル枝ノ基部(又ハ其各部)ヨリ根様絲ヲ發生シ，根様絲ハ體ノ下部ノ方ニ縦走ス. 體ノ下部ニ在テハ中軸細胞ハ極メテ多數ノ根様絲ヲ以テ包圍セラレ，根様絲ハ漸次其數ト太サトヲ增スヲ以テ或ハ太ク或ハ細ク，大小一ナラズ；故ヲ以テ體ノ下部ノ横斷面ニテハ孰レカ原來ノ中軸細胞ナルカヲ識別スルニ苦シム，而シテ漸次根様絲ノ數ト太サトヲ增スガ爲ニ其部ハ增厚シ，皮層枝ハ外方ニ壓出セラル.——四分胞子囊ハ(從來知ラレタル所ニテハ)環狀ニ分裂シ，散在ス. 胎原列及助細胞枝ハ皮層中ニ多數ニ存シ，助細胞ハ助細胞枝ノ頂端又ハ中央部ニ形成セラル. 囊果ハ充分ニ被包セラレテ皮層中ニ散在シ，小ナリ；仁ハ密ニ圍集シ 1-2 塊ノ小仁ヨリ成リ，各小仁餘リ多カラザル細胞ヨリ成リ，其各細胞殆ド皆胞子トナル.

模範トスベキモノハ 2 種ニシテ共ニ歐洲ノ海ニ產ス. D. coccinea Bonn. ハ助細胞ヲ助細胞列ノ中央部ニ有スルモノニシテ太西洋畧部ノ歐洲方面ニ產シ；D. purpurifera J. Ag. ハ頂端ニ助細胞ヲ有スルモノニシテ地中海及アドリアチツク海ニ產ス.

Dudresnaya japonica Okam. 新種.

ひびらうど　岡村稱.

第 XLI-XLII 圖版.

性質. 體ハ甚シク柔粘ニシテ，全部殆ド圓柱狀ヲナシ又ハ體ノ下部往々明ニ扁圓ナルコトアリ，而シテ體ノ下部ノ方ニ或ハ急ニ或ハ徐々ニ細クナリテ短キ莖ヲナシ，不規則ニ又

狀ニ分岐シ，其處此處ニ三叉乃至多叉狀ヲナシ，15-30 cm. 高ク，太キ部分ニテ 3-5 mm. 太シ．枝ハ蠕蟲狀ヲナシ，少距離ヲ距テヽ立チ，腹圓ク又ハ鋭角ニシテ，漸次上方ニ細ク，圓キ頂端ニ終ル．——四分胞子嚢ハ未詳．精子器ハ皮層枝ノ關節ノ細胞ヨリ變形シテ細長キ紡錘狀ヲナシ，雌雄異株ナリ．嚢果ハ球狀又ハ球狀—腎臟形ニシテ皮層枝ノ基部ニ近ク附カル．色ハ紅色ナリ．體ハ紙ニ固着ス．

産地：多分靜穩ナル所ニ産スルナルベシ．野母崎(肥前)，志摩，相模．

嚢果ノ形成：予ハ幸ニシテ胎原細胞ヨリ嚢果ノ形成セラルヽ順序ヲ殆ド餘ス所ナク研究スルコトヲ得タリ，尤モ細胞内ニ起ル核ノ變化等ニハ何等注意スル所アラズ．其大體ニ就テ，オーブラステマ絲ト助細胞トノ癒合及ビ之ニ次テ起ル嚢果發育ノ狀況ハ曩ニ Bornet 及 Thuret 氏後 Oltmanns 氏ガ Dudresnaya coccinea ニ就テ圖說シタルモノト酷似シ，又近頃 Howe 氏ガ米國産ノ一種 D. crassa ニ就テ氏ノ Phycological Studies II (Bull. Torr. Bot. Club, 23, 1905) *p* 572, 28-29 圖版，12-26 圖ニ圖說シタルモノト酷似ス．

胎原列ハ單條ニシテ，約 10 個ノ稍球狀ナル又ハ稍盤狀ナル細胞ノ一列ニ連ナレルモノヨリ成リ，(其内下部ノ 3-4 個ノ細胞ハ中性ナリ) 其上部ハ少シク外方ニ反リ，甚シク長キ受精毛ヲ戴キ，受精毛ハ屈曲シ又ハ殆ド眞直ナリ．胎心細胞ヨリ約テ 4-5 番目ノ二個細胞ハ他ノモノヨリ多少大ニシテ内容ニ富ム．精子器ハ胎原細胞ヲ有スル體トハ別ノ植物ニ形成セラル，即チ雌雄異株ナリ；而シテ線狀又ハ細長キ紡錘狀ニシテ皮層枝ノ關節細胞ヨリ形成セラル．

受精シタル後，胎心細胞ヨリ一個ノ長キ又ハ短キ絲狀突起ヲ出シテ其列ノ或數個ノ細胞ト癒合ス．此癒合ハ，第 3-5 圖

ニ示ス如ク，僅少ノ細胞ニ止ルコトアリ或ハ多クノモノニ及ブコトアリ．癒合シタル細胞ノ内容ハ平等ニシテ稍透明トナル．斯クテ癒合シタル一個又ハ數個ノ細胞ヨリ單條又ハ分岐セル「オーブラステマ」絲ヲ多數ニ發生ス；此絲ハ所々ニ隔膜ヲ以テ分タル．

助細胞列ハ極メテ多數ニ形成セラレ，5-9 個ノ細胞ヨリ成リ，此細胞ハ列ノ基部ノ方ニ少シク膨大シ，列ノ上部ハ多數ノ關節ヨリ成レル枝ニ伸ビ，其狀皮部ヲ形成スル枝ニ類ス；或ハ又往々短キコトアリ．助細胞ハ助細胞列ノ膨大セル部分ノ中央ヲ占メ之ト隣接セル二個細胞ノ直徑ノ半ホドノ大サヲ有ス；此二個細胞ハ甚シク膨大シテ内容ニ富ム．

胎原列ノ細胞ノ癒合シタルモノヨリ發出セル「オーブラステマ」絲ハ，上ニ云ヘル如ク二個ノ大ナル細胞ノ間ニ存スル特殊ノ細胞ナル一個ノ助細胞ト常ニ必ズ癒合ス．此細胞ノ内容物ハ始メハ其附近ノモノト同樣ニ見ユレドモ，成熟スルニ至レバ，遙ニ平等ニシテ稍透明トナリ，同時ニ助細胞及之ニ隣レル二個ノ大ナル細胞モ殊ニ厚キ粘膜ヲ以テ蔽ハルヽニ至ルコト第 7-8 圖ニ示ス所ノ如シ．

「オーブラステマ」絲ハ一個ノ助細胞ト癒合シタル後單ニ伸長スルカ又ハ枝ヲ出シテ更ニ遠キニ及ボシ以テ他ノ助細胞ト癒合セントス (6-9 圖)．其助細胞ト癒合シタル所ニハ直ニ果胞子ヲ形成ス (8 圖)；而シテ稀ニハ一旦受胎シタル助細胞ヲ去ル或距離ノ所ニ於テ果胞子ヲ作ルモノアリ (9 圖)．

成胞絲ノ各關節細胞ハ總テ果胞子トナリ，果胞子ハ順次ニ形成セラレ，數個ノ小仁ニ團集シ，小仁相集リテ一個ノ大ナル球狀又ハ少シク腎臟形ノ團塊ヲナス．果胞子ノ游離シタル後，其之ヲ包藏セル細胞ノ膜ハ粘膜ノ網ノ如クナリテ殘留ス．

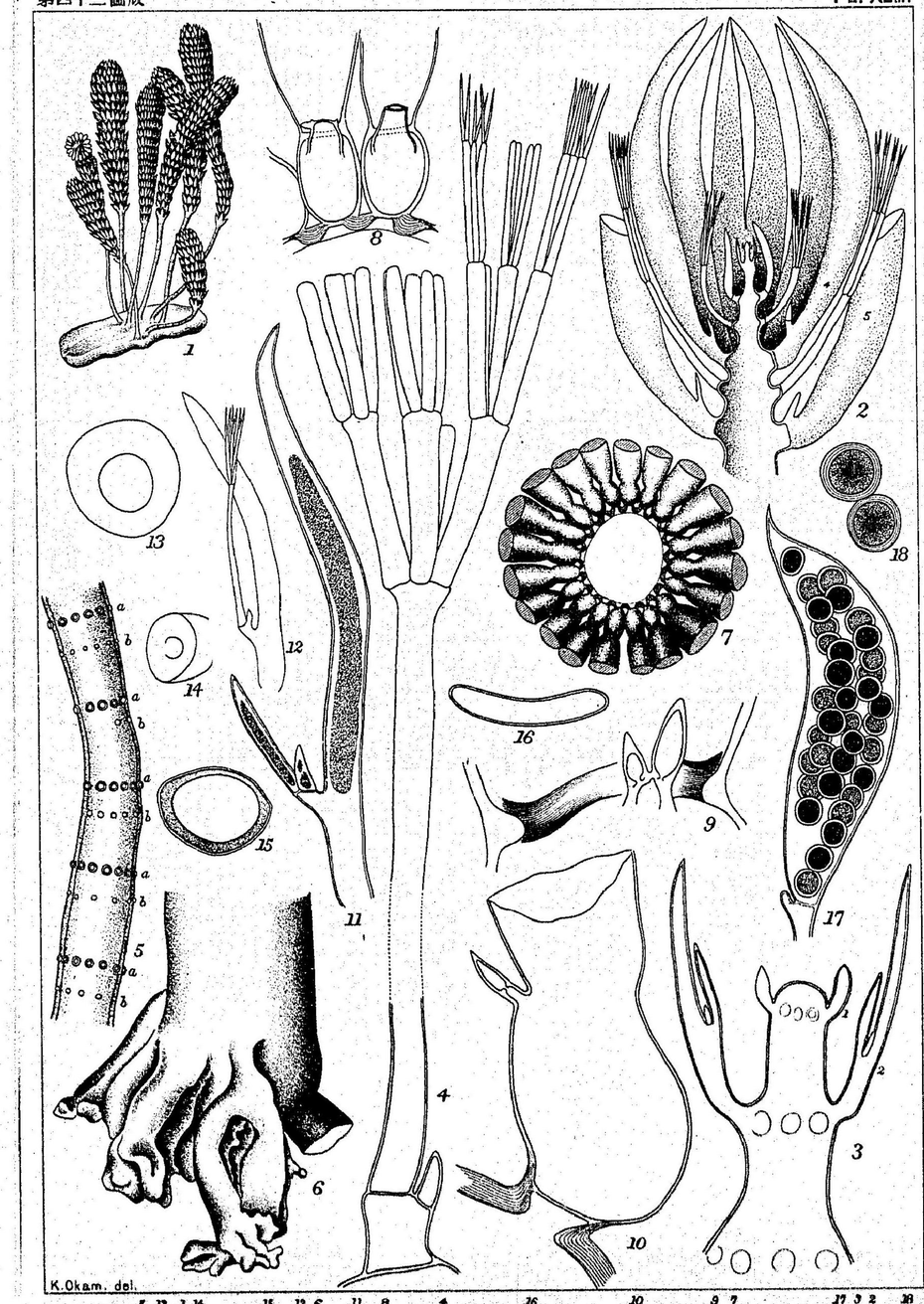
胞子ハ直ニ萠發シ，往々母體ニ於テシ，或ハ囊果ノ內ニアリテサヘ萠發スルモノアリ．第14圖ニ示ス如ク胞子數回分裂シタル後，不規則ニ分岐セル絲狀ノ胚植物ヲ形成シ，此モノ尙ホ益々分岐シテ一ノ圓塊ヲナシ，此ヨリ多數ノ長キ分岐セル絲狀ノ枝ヲ各方面ニ發出ス(16圖)．此胚植物ハ後一個ノ幼キ體トナルナリ．

備考：本植物ハ助細胞ノ介生的性質ニ依テD. coccinea (Ag.) Crouan ト一致シ，殊ニD. crassa Howe トハ其特殊ナル助細胞ヲ有スル點ニ於テ極メテ親密ナル類緣ヲ有ス；然レドモ，本種ハ該種ト異ナリ，皮層ノ絲狀枝ハ羽狀ニシテ該種ノ如ク叉狀ナラズ，又體ノ分岐法モ叉狀ニシテ該種ノ如ク羽狀ナラズ．是レ本植物ヲ新種トシタル所以ナリ．

第XLI圖版．　1: Dudresnaya japonica Okam., ひゃらうど，ノ體，$\frac{1}{1}$.—2: 體ノ橫斷面，$\frac{54}{1}$.—3: 中軸細胞，*a*, *a*, ヨリ輪生枝ヲ出シ，之ヨリ根樣絲，*r*, *r*, ヲ出ス狀，$\frac{390}{1}$.

第XLII圖版．　1: 二個ノ細胞ヲ以テ示セル中軸ヨリ *b*, *b*, ナル皮層枝ヲ輪狀ニ出スモノニシテ，體ノ構成セル一班ヲ示セルモノ；*a*, *a*, 助細胞列ノ始メ；*c*, 胎原列；*r*, 根樣絲；$\frac{390}{1}$.—2: *a*-*b*, 胎原列，$\frac{390}{1}$.—3: 今方ニ受胎シタル胎心細胞ヨリ絲狀突起ヲ出シテ其列中ノ或細胞ト癒合セントスルモノ，$\frac{600}{1}$.—4: 胎原列(1-10ノ符號ヲ以テ示シタルモノ)中ノ幾分癒合シタル細胞ヨリ「オープラステマ」絲ヲ出シタルモノ；*t*, 受精毛；$\frac{600}{1}$.—5: 胎原列中ノ細胞ノ癒合シタルモノ及ビ「オープラステマ」絲；*fc*, 癒合シタル細胞；1, 2, 3, 等ノ符號ハ「オープラステマ」絲ノ各組即チ夫々ノ箇所ヨリ出タル一組ヅヽヲ示ス；*t*, 受精毛；$\frac{600}{1}$.—6: 方ニ「オープラステマ」絲，*f*, *f*, ト癒合シタル助細胞，*a*, $\frac{220}{1}$.—7: 6圖ト同樣ノ狀態ニシテ助細胞列ノ細胞ノ膜ノ增厚セルヲ示

第四十三圖版　　PL. XLIII.



ズモノ，$\frac{390}{1}$.—**8**：受精シタル助細胞，*a*，ヨリ仁，*n*，ノ發育スル初歩；*f*，*f*，他ト同ジ，$\frac{600}{1}$.—**9**：助細胞，*a*，ヨリ或距離ニ於テ「オープラステマ」絲ノ一部ニ幼キ仁ヲ形成スルモノ，$\frac{600}{1}$.—**10**：精子器，$\frac{220}{1}$.—**11**：幼キ精子細胞ノ形成スルモノ，$\frac{600}{1}$.—**12**：嚢果；*a*，受胎シタル助細胞，$\frac{390}{1}$.—**13**：嚢果ノ内ニ於テ果胞子ノ萠發シタルモノ；*a*，12圖ニ同ジ，$\frac{390}{1}$.—**14-15**：果胞子ノ萠發スル種々ノ狀態，$\frac{390}{1}$.—**16**：胚植物ノ除程發育タシルモノ，$\frac{600}{1}$.

Halicoryne Wrightii Harv.

ACETABULARIEAE (DASYCLADACEAE).

PL. XLIII.

Nom. Jap.: *Iso-sugina.*

Halicoryne Wrightii Harv. Char. New. Alg. Jap. in Proceed. Amer. Acad. vol. IV, p. 333; J. Ag. Till Alg. Syst. VIII, p. 159, Tab. V, fig. 1-5; Cramer Ueber Halic. Wrightii p. 1-13, fig. 1-9. (Vierteljahrsschr. d. nat. Ges. Zürich. Jahrg. XL, 1895); De Toni Syll. Alg. I, p. 423; 岡村，日本藻類名彙 p. 194.—*Pleiophysa spicata* (Kuetz.) Sond. in *F. Muell. Fragm. Phyt. Austr. suppl.*; J. Ag. Till Alg. Syst. VIII, p. 159; *Polyphysa spicata* Knetz. Tab. Phyc. XVI, t 1, f. 2.

Fronds are simple, clavate and thickly calcified, each standing with a slender cylindrical stem from whose lower extremity a whirl of roots is emitted, and attain the height of 6-7 cm. The stem is naked or bared of any leaves for 10-20 mm. from the lower extremity, and thence upwards it is densely imbricated by numerous (30 or more) whirls of fertile leaves. The naked portion of stem is marked with many rings of roundish scars, of which there are two sorts, the larger

and the smaller. The larger scars indicate the insertions of already dropped fertile leaves, while the smaller, of the sterile, that is "internodiale Haare" of Cramer. The rings of the smaller scars stand near to the upper larger ones, and the larger and smaller ones come in the regular alternation. The number of scars in each ring of both sorts is not definite according to the position and thickness of the stem, but in general that of scars in the larger ones is always a little more numerous than that of those in the smaller, it amounting from some 12 to 15 or more in the bared portion.

In the growing portion of frond the sterile leaves that is hairs are seen, as in the fig. 2, at 4th (between *3* and *4* in the fig.) and 6th node (between *4* and *5*), from the apex, while those standing on the upper 3 (*1-3*) nodes are all young fertile leaves. Below the 6th node, the sterile leaves are usually degenerated and the most part of them is decayed off, as it is illustrated in J. Ag. l.c. fig. 4, *b*. They are, when perfect, 3-4 times polychotomous with 4-5 cylindrical cells at every segment, which gradually decrease in thickness upward. A full grown hair has at the base a short pedicel with a smaller cell sometimes attached to it, which may be considered as another rudimentary hair.

The fertile leaves, which are entirely free from each other, are much longer and larger than the sterile, and full of chlorophyll grains. They are differenciated, near the base, by a slight constriction, into a short pedicel-like portion (the "Basilarwurst" of Cramer) and scimiter-shaped body. The latter is a sack which is not terete, but more or less compressed, and especially so in the median portion. It is slightly curved outward facing the concave side to the stem, and thickenes at the apex into a short spine which is slightly bent outward, that is turned away from the stem. When young, the scimiter like portion is almost cylindrical, being attenuated above and slightly curved. The number of fertile leaves in a whirl amounts to 20 or

more according to their position. They stand at the beginning in an open communication with the stem; but more afterward, the wider opening is gradually narrowed by thickening of wall arround it, leaving a narrow central aperture which becomes frequently closed by subsequent thickening.

The pedicel of fertile leaves has a slight protuberance at the inner side which Cramer has described as "Buckel." It recalls the corona superior of *Acetabularia*. On the apex of the protuberance, there is ia 2-3 times polychotomous hair (fig. 12; i.e. the "ligulare Haar" o Cramer); but not seldom it remains in the form of a simple, cylindrico-attenuated cell. The hair, which is much shorter and slenderer than the sterile leaves, is soon dropped off, so that the apex of the protuberance is truncated in older ones, leaving a minute pore. At the outerside of the protuberance, that is the side away from the stem and therefore facing toward the scimiter like body, there is another smaller single cell. The latter, which Cramer has described as "brinformige Anlage," is mostly only one, but not seldom two are present, and in other times, entirely wanting. The nature of this cell, as Cramer has supposed, may be considered as a lateral rudimentary hair.

All the segments of the fertile leaves, i.e. the pedicelate portion, hairs etc. are at first in free communication with stem, but the pore is often closed by subsequent thickening. The fertile leaves and the stem are thickly calcified, while the sterile leaves and so called "ligular Haar" of the fertile one are not.

The fertile leaves when mature are transformed into sporangia, each of which contains 23-36 aplanospores. The spore is spherical, covered with two membranes; the outer thin and structureless; the inner thick and radially striated in optical section. Spores measure 140-207 μ in diam. and the inner membrane is 12-22 μ thick. On

application of iodine of potassium iodide, the outer membrane takes slightly purplish colour, while the inner blood-reddish colour with slightly purplish tinge.

The fertile and sterile leaves may be considered as homologous organs, especially so, as it is seen from the figure 2, where 3 consecutive nodes from the apex, more especially the second (Fig. 2, *2*) and third nodes (Fig. 2, *3*) carry the fertile leaves instead of the regular alternation. The case just spoken of, however, is not of usual occurrence.

Colour of frond is chalky white with light greenish shade.

Hab.: On the rocks and corals near high tide in calm places. Riukiu.

Remarks: The affinity of *Halicoryne* with *Acetabularia* is beyond any doubt, as it is shown by the possession of the sterile and fertile leaves. That the upper protuberance of the fertile leaves in *Halicoryne* recalls the corona superior of *Acetabularia* has already been stated above. It is interesting that *Acetabularia crenulata*, which normally produces several caps in succession above each other, has the closest affinity with *Halicoryne*. *Halicoryne*, on the other hand, shows an affinity with the members of *Dasycladeae* by possession of both sorts of leaves, but being distinguished from the latter by the alternation of those organs and character of sporangia.

Plate XLIII.—Fig. **1**: fronds of *Halicoryne Wrightii* Harv. growing on coral, in nat. state and size.—Fig. **2**: longitudinal section of the terminal portion of the stem; *1,2,3,4,5*, fertile leaves; well-formed sterile leaves at the fourth (between *3* and *4*) and sixth nodes (between *4* and *5*) from the apex, $\frac{52}{1}$.—Fig. **3**: apical portion of frond of fig. 2 magd., showing fertile leaves at the second node, $\frac{220}{1}$.—Fig. **4**: fully developed sterile leaf, $\frac{390}{1}$.—Fig. **5**: naked portion of stem; *a*, scars for the fertile leaves; *b*, those for the sterile hairs; $\frac{22}{1}$.—Fig.

6: basal portion of stem, $\frac{52}{1}$.—Fig. **7**: whirl of fertile leaves in the upper portion of frond, viewed from the underside in cross-section of stem, $\frac{22}{1}$.—Fig. **8**: two fertile leaves seen from the inner surface, $\frac{91}{1}$.—Fig. **9**: surface-view of the constricted node of an older fertile leaf seen from the inner side, showing the thickening of wall in optical section; $\frac{390}{1}$.—Fig. **10**: younger fertile leaf seen from the side in optic section, $\frac{220}{1}$.—Fig. **11**: younger fertile leaf marked *3* in fig. *2*; *i. e.* that which arises from the 3rd node from the apex of stem, $\frac{220}{1}$.—Fig. **12**: another younger fertile leaf arising at the 3rd node of a different frond having "Ligulare Haar," $\frac{91}{1}$.—Fig. **13**: scar of fertile leaf in denudated portion of stem, magd;—Fig. **14**: the same of the sterille leaf, magd.—Fig. **15**: cross-section of basal portion of a fertile leaf, $\frac{52}{1}$.—Fig. **16**: cross-section of the middle portion of a fertile leaf, $\frac{52}{1}$.—Fig. **17**: sporangium, $\frac{37}{1}$.—Fig. **18**: aplanospores, $\frac{52}{1}$.

Halicoryne Harvey 1859.

いそすぎな屬.

ACETABULARIEAE (DASYCLADACEAE).

かさのり亞科 (タデクラジア科).

體ハ棍棒狀, 單條ニシテ石灰質ヲ被ムリ, 一條ノ細キ中空ナル軸ヲ有シ, 軸ノ周圍ニ數層ノ小枝ヲ輪生ス; 體ノ下部ハ此等小枝ノ早落スルガ爲ニ裸出シテ莖狀ヲナシ其痕跡ヲ印スルノミ. 輪生スル小枝ハ二樣ニシテ正シク交互シ, 一ハ成實枝ニシテ一ハ中性枝ナリ; 成實枝ハ苣薦狀ヲナシ, 屈曲シ, 先端尖リ, 各相互ニ離レテ癒着セズ, 後胞子囊トナリ, 內ニ多數ノ「アプラノ」胞子ヲ藏ス. 中性枝ハ細クシテ複叉狀ニ分レ, 成實枝ヨリハ小ニシテ細ク, 頂端附近ニノミ殘存ス. 「アプラノ」胞子ハ球狀ニシテ厚キ膜ヲ被ムル.

從來下ノ一種我琉球ニ知ラレタルノミナリ.——屬ノ名ハ als (海) ト coryne (棍棒) トヨリ成ル, 即チ體ノ形ニ依レルナリ.

Halicoryne Wrightii Harv.

いそすぎな　岡村稱.

第 XLIII 圖版.

體ハ單條, 棍棒狀ニシテ厚ク石灰質ヲ被ムリ, 細キ圓柱狀ノ莖ヲ以テ叢生シ直立ス; 莖ノ下端ヨリ根ヲ輪生シ, 高サ 6-7 cm. ニ達ス. 莖ハ裸出ス; 即チ基部ヨリ 10-20 mm. ノ間ハ少シモ小枝ナク, 上部ハ多數ノ成實枝ヲ輪生ス; 成實枝ハ覆瓦樣ニシテ密ニ重疊シ, 輪層ノ數 30 乃至其以上アリ. 莖ノ裸出セル部分ニハ數層ノ圓形痕アリテ其輪層ニ大小ノ二種アリ; 大ナル圓痕ハ旣ニ落タル成實枝ノ付着點ヲ印スルモノニシテ, 小ナル方ハ中性枝即チ Cramer 氏ノ所謂"節間毛"ト稱スルモノヽ付着點ヲ印ス. 小痕ノ輪ハ其上ナル大痕ノ輪ニ接シテ存シ, 大小痕ノ輪層正シク相交互ス. 兩者ノ各輪ニ於ケル圓痕ノ數ハ莖ノ位置ト太サトニヨリ一定セザレドモ, 一般ニ大ナル圓痕ノ方ハ小ナルモノヽ方ヨリ常ニ少シク多數ニシテ, 其數ハ約 12 乃至 15 或ハ其以上ニ達ス. 體ノ成長點附近ニ於テハ, 中性枝ハ第二圖ニ見ル如ク頂端ヨリ第四番(圖ニテハ 3 ト 4 トノ間)及第六番目(4 ト 5 トノ間)ノ節ヨリ出デ, 其上部ノ三節ヨリ出ルモノハ總テ幼キ成實枝ナリ. 第六節以下ニハ中性枝ハ通常退化シ, 其大部分ハ萎朽スルコト J. Agardh 氏ノ Till Alg. Syst. ニ揭ゲタル第 4 圖 b ニ見ル所ノ如シ. 中性枝ハ, 其完全セルモノニテハ, 3-4 回複叉狀ニシテ各部 4-5 條ノ圓柱狀細胞ヨリ成ル; 此等ノ細胞ハ漸次上方ニ行クニ從テ細クナルナリ. 充分ニ成長シタル毛ハ其基部ニ短キ柄ヲ有シ, 時トシテ

ハ此柄ニ一個ノ小ナル細胞付着スルコトアリ; 此細胞ハ充分ニ發育スルコトヲ得ザル狀態ニアル毛トシテ考フルヲ得ベシ.

成實枝ハ互ニ癒着スルコトナクシテ相離レ, 中性枝ヨリハ遙ニ大ニシテ且長ク, 葉綠粒ヲ以テ充サル. 成實枝ハ萱蒴狀若クハ及形ヲナシ, 基部ニ近ク輕クククビレ, 短キ柄ノ如キ部分 (Cramer 氏ノ"基部ノ膨レ"ト稱セルモノ) ト及ノ如キ部分トニ分タル. 及ノ如キ部分ハ毬狀, 圓柱狀ナラズシテ多少扁壓ス, 殊ニ其中央部ニ於テ然リ, 而シテ凹ミタル側面ヲ莖ノ方ニ向ケテ外方ニ屈曲シ, 其先端ハ厚クナリテ短キ刺ヲナシ, 刺ハ少シク外方ニ曲ル, 即チ莖トハ反對ノ方ニ屈曲ス. 幼キトキハ及狀部ハ殆ド圓柱狀ニシテ上方ニ細クナリ, 少シク屈曲ス. 一輪層中ニアル成實枝ノ數ハ其位置ニ從テ 20 乃至其以上ニ達ス, 而シテ初メハ莖ト通ズレドモ, 後其廣キ通路ハ周圍ノ壁ノ漸ク增厚スルガ爲ニ狹クナリテ, 僅ニ中心ニ狹キ孔ヲ殘ス; 然レドモ, 此孔モ亦往々後ニ至リテ閉塞ス.

成實枝ノ柄ハ其內側ニ於テ僅少ノ突起ヲ有ス; 此突起ハ Acetabularia 屬ノ上花冠 (corona superior) ニ相當ス. 此突起ノ先端ニ二三回複叉狀ヲナセル毛アリ (Cramer 氏ノ"舌毛"ト云ヘルモノ是ナリ); 然レドモ此毛ハ往々單條ニシテ圓柱狀ノ細胞ノ先端細クナリタル如キ形ニテ殘ルコトアリ; 而シテ中性枝ヨリハ遙ニ短ク又遙ニ細クシテ早落ス; 故ニ此突起ノ頂端ハ其老成セルモノニテハ截形ヲナシ, 小サキ孔ヲ存スルニ至ル. 此突起ノ外側即チ莖ヨリ遠キ方ノ側(即チ及狀部ニ面シタルモノ)ニ又一ノ小サキ細胞アリ. 此細胞ハ Cramer 氏ガ"梨狀附屬物"トシテ記載シタルモノニシテ多クハ只一個ナレドモ其二個ヲ存スルハ稀ナラズ, 而シテ又全ク缺損スルモアリ. 此細胞ノ性質ハ Cramer 氏ガ思惟シタル如ク, 側面ニ生ジタル發育未發ノ毛トシテ考フルヲ得ベシ.

成實枝ノ各部即チ柄,毛等ハ始メ莖ト通ズレドモ,後往々周圍ノ壁ノ增厚スルガ爲ニ閉塞スルニ至ル. 成實枝及莖ハ厚ク石灰質ヲ存スレドモ,中性枝及成實枝ノ柄ノ突起上ニアル毛ハ之ヲ被ラズ.

成實枝ハ充分成熟スルトキハ子嚢トナル. 子嚢ハ 23-36 個(或ハ多分尚多カラン)ノ「アプラノ」胞子ヲ藏ス. 胞子ハ球狀ニシテ,二層ノ膜ヲ以テ包マレ,外膜ハ薄クシテ特別ノ構造ナク,內膜ハ厚クシテ透視斷面ニテハ放射狀ニ線狀ヲ存ス胞子ノ直徑ハ 140-207 μ ニシテ內膜ノ厚サハ 12-22 μ ナリ. 沃度沃度加里液ヲ加フレバ外膜ハ少シク紫紅色ヲ取レドモ,內膜ハ血紅色ニ稍紫紅色ヲ帶ビタル如キ色ヲ呈ス.

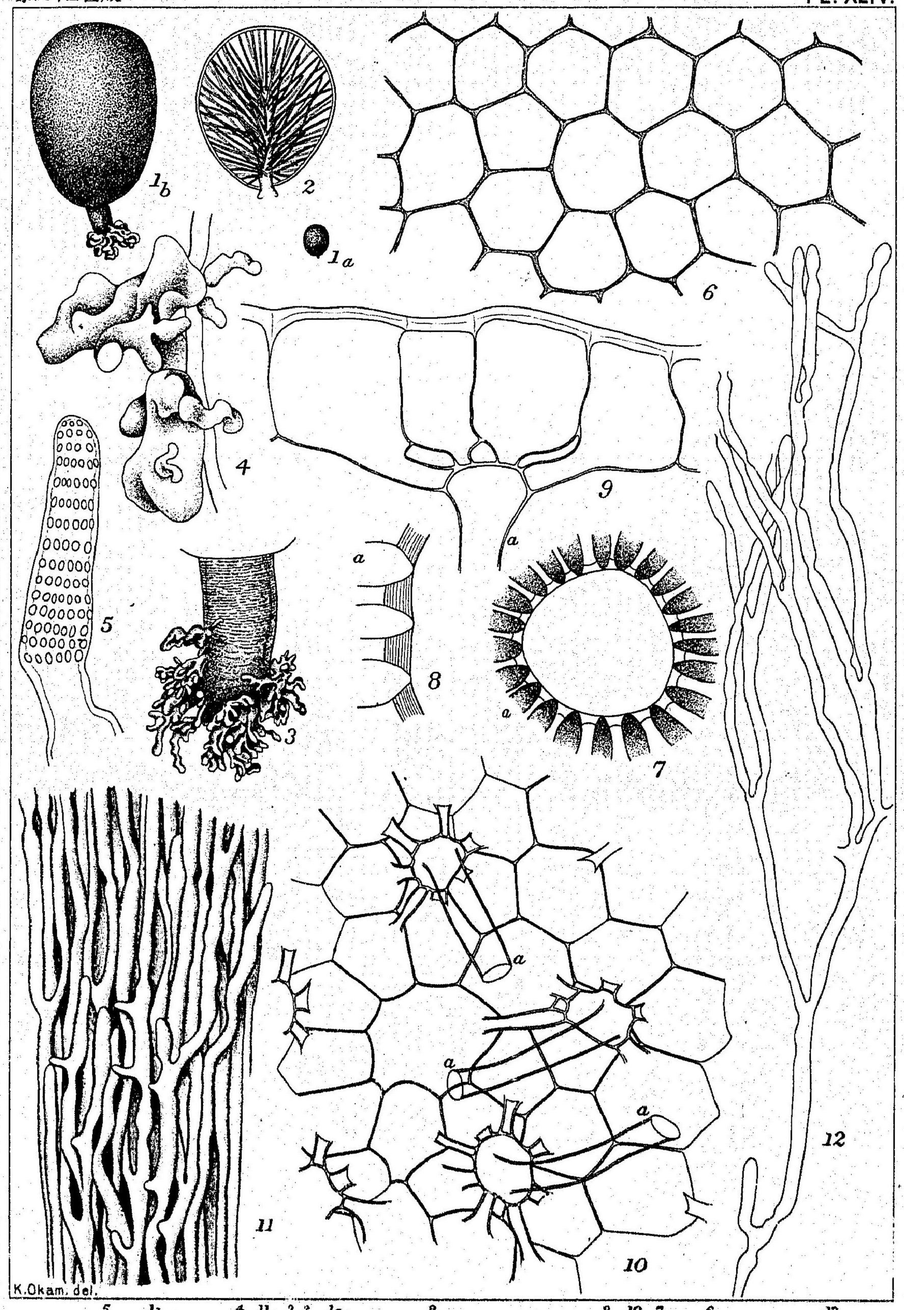
成實枝及ビ中性枝ハ共ニ同質ノモノト考フルヲ得ベシ;殊ニ第二圖ニ示ス如ク,第二ト第三節ト相續キテ成實枝ヲ出シ中性枝ト相交互スルコトナキヲ以テ見レバ其同性質ノモノタルコトハ之ヲ知ルニ難カラザルベシ. 然レドモ第二圖ニ示ス如キ場合ハ常ニ必ズ然リトハ云フ能ハザルモノトス.

體ノ色ハ淡キ綠色ヲ帶ビタル白色ナリ.

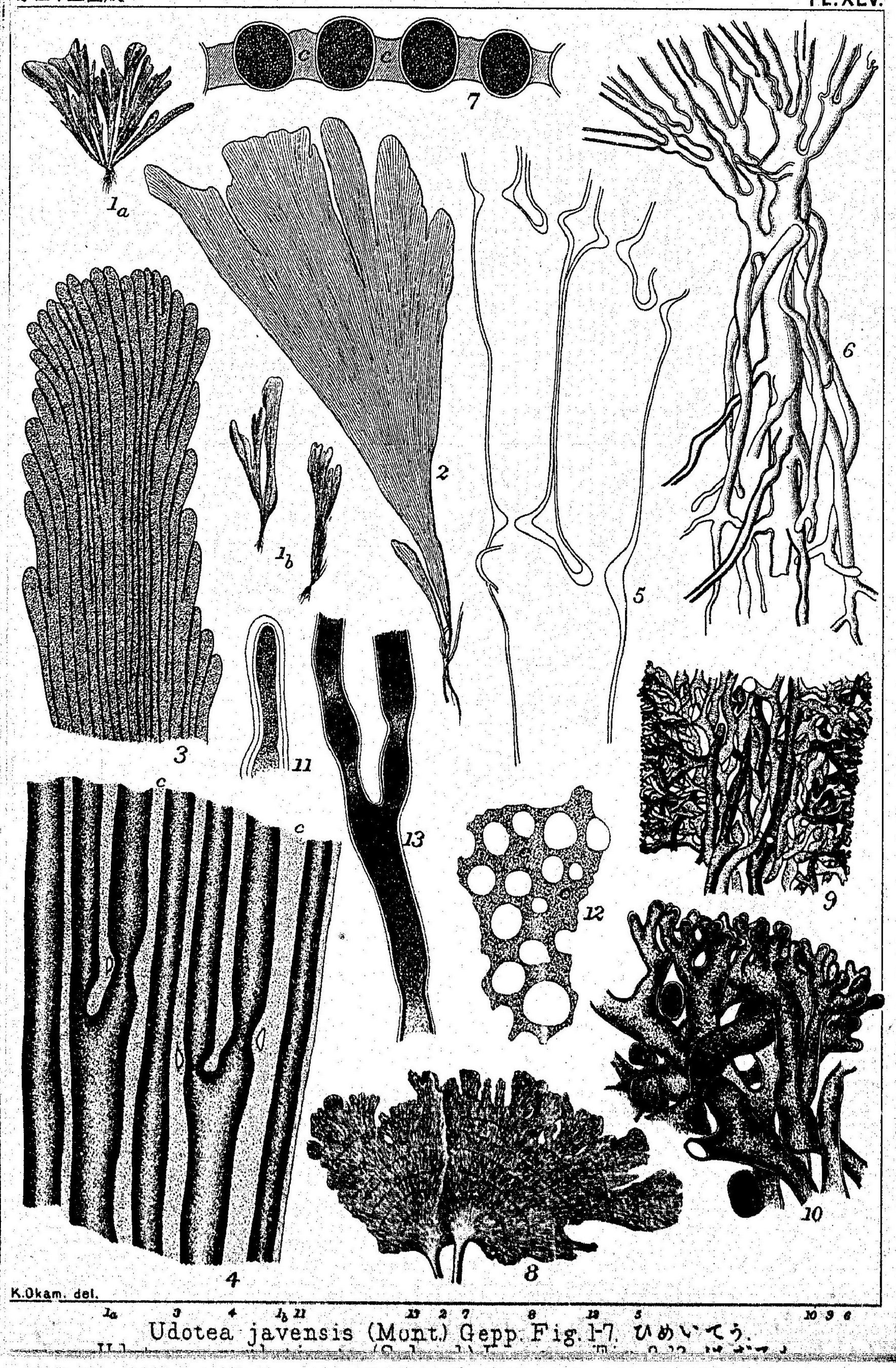
產地: 高潮線ノ岩石,潮溜リ等ニ產ス. 琉球.

分布: ニウカレドニア.

備考: 成實枝ト中性枝トヲ有スルコトニ因リテ Halicoryne 屬ト Acetabularia 屬トノ近緣アルコト疑ヲ容レズ. Halicoryne ニ於テ成實枝ノ小突起ガ Acetabularia ノ成實枝ノ上側ニアル上花冠ニ相當スルコトハ上ニ云ヘリ. Acetabularia crenulata ハ常態ニ於テ數層ノ成實枝ヲ輪生シ層々相重疊スルモノアルコトハ Halicoryne ト最モ類緣ノ近キヲ示ス點ニ於テ趣味少ナカラズ. 又一方ニ於テハ Halicoryne ハ二樣ノ枝ヲ有スルコトニ依テ Dasycladeae 亞科ノモノトモ類緣ノ存スルヲ示ス; 然レドモ其



Bornetella capitata (Harv.) J.Ag. Fig. 1-10. みづたま.
Udotea conglutinata (Soland.) Lamour. Fig. 11-12. はおろも.



Udotea javensis (Mont.) Gepp. Fig. 1-7. ひめいてう.

之ト異ナル點ハ二様ノ枝ノ相交互スルト子嚢ノ異ナルトニアリトス.

第XLIII圖版. **1**: Halicoryne Wrightii Harv., いそすぎな, ノ珊瑚上ニ生ズル狀, $\frac{1}{1}$.—**2**: 莖ノ成長端ノ縦斷ニシテ, *1-5* ハ成實枝; 頂端ヨリ第四節(*3*ト*4*トノ間)ト第六節(*4*ト*5*トノ間)トニ充分形成セラレタル中性枝アルヲ示ス, $\frac{52}{1}$.—**3**: 第2圖ノ頂端ヲ廓大シタルモノ; 第二ノ節(2)ニ成實枝アルヲ示ス, $\frac{220}{1}$.—**4**: 充分發育シタル中性枝, $\frac{390}{1}$.—**5**: 莖ノ裸出セル部分; *a*, 成實枝ノ痕; *b*, 中性枝ノ痕跡, $\frac{22}{1}$.—**6**: 莖ノ下部, $\frac{52}{1}$.—**7**: 體ノ上部ニ於ケル成實枝ノ輪環ヲ莖ヲ横斷シテ莖ノ下部ヨリ見タルモノ, $\frac{22}{1}$.—**8**: 二個ノ成實枝ヲ內面ヨリ見タルモノ, $\frac{91}{1}$.—**9**: 老成セル成實枝ノクビレタル節ヲ內面ヨリ見タルモノナリ, 而シテ壁ノ厚ミハ透視斷面ニテ示ス, $\frac{390}{1}$.—**10**: 幼キ成實枝ヲ側面ヨリ透視斷面ニテ見タルモノ, $\frac{220}{1}$.—**11**: 第2圖ノ*3*ナル幼キ成實枝ニシテ莖ノ頂端ヨリ第三節ニ出タルモノ, $\frac{220}{1}$.—**12**: 仝上ノ位置ヨリ出タル他ノ植物ノ幼キ成實枝ニシテ毛ヲ有スルモノヲ示ス, $\frac{91}{1}$.—**13**: 莖部ニ於ケル成實枝ノ落チタル痕跡, 廓大.—**14**: 仝上ノ中性ノモノ, 廓大.—**15**: 成實枝ノ基部ノ横斷面, $\frac{52}{1}$.—**16**: 成實枝ノ中央部ノ横斷面, $\frac{52}{1}$.—**17**: 子嚢, $\frac{37}{1}$.—**18**: アプラノ胞子, $\frac{52}{1}$.

Bornetella capitata (Harv.) J. Ag.

Nom. Jap.: *Midzutama*.

PL. XLIV, Fig. 1-10.

Bornetella capitata (Harv.) J. Ag. Till Alg. Syst. VIII, p. 156; De Toni Syll. Alg. I, p. 415; Cramer Siphoneen p. 18, fig. 249, *c*;

Cramer Ueber die verticillirten Siphoneen, besonders Neomeris und Bornetella (1890) p. 30, Taf. IV, fig. 6-14.—*Neomeris capitata Harv. List of Friendly Islands Algae sub. no. 85.*—Neomeris sp. 岡村, 日本藻類名彙 p. 195.

Hab.: On the foot of *Acetabularia mediterranea* Lmx. in Riukiu; Ogasawara-isl., Riukiu (Col. Inui).

Pl. XLIV, Fig. 1-10. Fig. **1**: *a*, frond of *Bornetella capitata* (4×4 mm. in size) in nat. state and size; *b*, same magd., $\frac{5}{1}$.—Fig. **2**: longitudinal section of frond, $\frac{5}{1}$.—Fig. **3**: stem (wrinkled on the surface) 506 μ thick, and roots, $\frac{22}{1}$.—Fig. **4**: sac-like roots bulging out from the side of stem, $\frac{91}{1}$.—Fig. **5**: central axis deprived of verticillate leaves, $\frac{22}{1}$.—Fig. **6**: surface-view of frond, $\frac{91}{1}$.—Fig. **7**: cross-section of the axis (356 μ in diam.); *a*, leaves; $\frac{91}{1}$.—Fig. **8**: portion of the same; *a* leaves; $\frac{220}{1}$.—Fig. **9**: cross-section of the facets of frond; *a*, one of leaves verticillately arranged around the axis, $\frac{140}{1}$.—Fig. **10**: surface-view of the facets of frond viewed from the inner side; *a*, *a*, verticillate leaves giving rise to 6-8 facets upward; $\frac{91}{1}$.

Bornetella Mun. Chalm. 1877.

みづたま屬.

DASYCLADEAE (DASYCLADACEAE).

ダジクラヂア亞科 (ダヂクラヂア科).

體ハ棍棒狀又ハ俵狀ニシテ短莖ヲ有シ, 石灰質ヲ被ムル. 莖ハ分岐スルコトナク圓柱狀ニシテ厚膜ヲ有シ, 基部ニ於テ不規則ニ分岐セル嚢狀ノ付着器ヲ形成ス, 而シテ周圍ヨリ密ニ相接近シテ重疊セル輪生ノ枝(之ハ莖ト同性質ノモノナリ)ヲ生ズ. 枝ハ一輪層ヨリ 12-48 條ヲ生ジ其先端二回(又ハ三回)放射狀ニ分岐ス. 此放射狀ニ分岐シタル枝ハ嚢狀ニ膨大

シ互ニ密ニ接觸スルヲ以テ, 之ヲ表面ヨリ見レバ概子五-六角形ノ細胞ノ如ク見ユ; 此細胞相接着シテ一層ヲナシ以テ棍棒狀又ハ球狀ノ體ヲナス; 而シテ莖ハ此棍棒狀部ノ內ニテ中軸ノ如クナルナリ. (此多角形ノ細胞ノ如ク見ユル部分ハ其幼キ時ニ當リテハ單條又ハ通常叉狀ニ分岐セル毛ヲ戴クカ否カ詳ナラズ; 毛ハ若之ヲ存スレバ早落性ニシテ僅少ノ細胞ヨリ成ル). 子嚢ハ中軸ヨリ輪生セル枝ノ側部ニ棍棒狀又ハ球狀ニ膨大シテ生ジ, 多數ノ球狀ナル胞子ヲ藏ス; 其內容ハ後球狀ナル被膜ヲ有スル胞子ニ變ズ.

此屬ハ Neomeris 屬ト最モ近ク類似スレドモ Neomeris 屬ハ中軸ヨリ出ル枝ノ上端二個ニ分岐シ, 且ツ此枝ノ頂端ニ子嚢ヲ生ズルヲ以テ異ナリトス. 從來知ラレタルモノハ僅ニ二種ニシテ「フレンドリー」諸島「オーストラリア」等ニ產ス. 屬ノ名ハ佛國ノ海藻學者 E. Bornet 氏ノ名譽ノ爲ニ設ケタルナリ.

Bornetella capitata (Harv.) J. Ag.

みづたま 岡村稱.

第 XLIV 圖版, 1-10 圖.

短キ圓柱狀ノ莖ヲ有シ, 體ハ倒卵形—球狀, 俵狀等ヲナス. 色淡綠色ナリ. 體ノ表面ヨリ生ズル毛ハ其存否詳ナラズ. 構造ハ屬ノ所ニ記シタルモノニ同ジ.

產地: かさのりノ基部ニ付着セリ(琉球), 多分ハ淺キ所又ハ潮溜リ等ニ生ズルナルベシ. 小笠原島, 琉球(乾氏).

分布: フレンドリー諸島.

第 XLIV 圖版, 1-10 圖. **1**: *a*, Bornetella capitata ノ體, (大サ 4×4 mm. ナリ), $\frac{1}{1}$; *b*, 仝上ヲ擴大シタルモノ, $\frac{5}{1}$.—**2**: 體ノ縱斷面, $\frac{5}{1}$.—

3: 莖(表面ニ皺アリ, 506 μ太シ)及ビ根, $\frac{22}{1}$.—**4**: 莖ノ側面ヨリ出タル嚢狀ノ根, $\frac{91}{1}$.—**5**: 輪生セル枝ヲ除キテ中軸ノ表面ヲ示ス, $\frac{22}{1}$.—**6**: 體ノ表面, $\frac{91}{1}$—**7**: 中軸ノ横斷面, (徑 56 μ); *a*, 葉即チ輪生セル枝, $\frac{91}{1}$.—**8**: 仝上ノ一部; *a*; 仝上, $\frac{220}{1}$.—**9**: 體ノ表面ナル皮部ノ横斷面; *a*, 仝上, $\frac{140}{1}$.—**10**: 體ノ表面ナル皮部ヲ内面ヨリ見タルモノ; *a*, *a*, 仝上ノ枝ニシテ其上部 6-8 個ノ表面細胞ニ膨大スルモノ, $\frac{91}{1}$.

Udotea javensis (Mont.) Gepp.

Nom. Jap.: *Himé-Icho.*

PL. XLV, Fig. 1-7.

Udotea javensis (Mont.) Gepp Rhipidosiphon and Callipsygma (Journ. of Bot. vol. XLII, 1904, No. 504) p. 364, Pl. 467, f. 1-4; Id. Rhipidosiphon (Journ. of Bot. XLIII, 1905, p. 129).—*Rhipidosiphon javensis Mont. Prodr. Phycolog. Antarct. 1842, p. 14, in D'Urv. Voy. Pol. Sud, 1845, p. 23, pl. 7, f. 3*; Kuetz. Sp. Alg. p. 493; De Toni Syll. Alg. I, p. 518; Wille in Engler u. Prantl natürl. Pflanzenf. I Th. 2, p. 144; **岡村, 日本藻類名彙** p. 186.

Hab.: On rocks between tide-marks. Hiuga (Col. Yendo).

Pl. XLV. Fig. 1-7. Fig. **1**: *a-b*, frond of *Udotea javensis* (Mont.) Gepp, in nat. size.—Fig. **2**: one of fronds magd., $\frac{5}{1}$.—Fig. **3**: surface view of the apical portion of frond, $\frac{54}{1}$.—Fig. **4**: surface-view of the median portion of frond; *c*, *c*, lines of calcification, $\frac{220}{1}$.—Fig. **5**: filaments decalcified to show the dichotomy, $\frac{220}{1}$.—Fig. **6**: lower portion of frond showing the stem and root-fibres. $\frac{54}{1}$.—Fig. **7**: cross-section of frond; *c*, *c*, lines of calcification; cells measuring 35 μ in thickness; $\frac{340}{1}$.

Udotea Lamouroux 1816.

はごろも屬.

CODIACEAE みる科.

體ハ輕ク石灰質ヲ以テ被ハレ, 窄ニ甚ダシク之ヲ存スルコトアリ; 莖ヲ存ス; 莖ハ往々匍匐シ又分岐シ, 其上部ニ扇狀ノ體ヲ戴ク. 扇狀ノ部ハ單一ニシテ扁平, 往々楔形ヲナシ, 上部ハ分裂シ又ハ不規則ニ分レ, 時トシテハ其緣邊ヨリ副枝ヲ生ズ. 莖及其ヨリ分レタル小莖ハ圓柱狀又ハ稍扁圓ニシテ, 一條ノ細胞ヨリ成ルモノアレドモ, 概ネ明ニ區別セラルベキ髓部ト皮層トニ分レ, 其下部ハ無數ノ毛狀根ヲナス. 扇狀部ハ重圈狀線ヲ呈シ, 時ニハ全ク皮層ヲ被ラザルモノアレドモ, 又一層ノ皮層ヲ存スルモノアリ. 細胞ニハ何レノ處ニモ横隔膜ヲ生ズルコトナシト雖モ, 其處此處ニクビレヲ存ス, クビレハ殊ニ絲狀細胞ノ分岐點ニ於テ之ヲ存ス. 游走子囊(?)ハ圓形ニシテ扇狀部ノ絲狀細胞ノ側部ニ短キ枝ヲナス; 此他ニ生殖細胞ラシキモノアルヲ知ラズ.

熱帶及温帶ノ海ニアリテ約10種アリ; 四族ニ分タル.——屬ノ名ハ Ydor (水) ヨリ成ル.

Udotea javensis (Mont.) Gepp.

ひめいてう 岡村稱.

第XLV圖版, 1-7圖.

體ハ小ニシテ頗ルいてうノ葉ニ類シ, 今予ノ許ニアルモノニテハ皆分裂スト雖モ, 書ニ依ルニ稍全キモアリ, 高サ 25-30 mm. ニシテ灰白綠色ヲナス. 體ノ下部ハ一條ノ單管ナル莖ヨリ成リ, 莖ノ各方面ヨリ毛狀根ヲ叢出シ, 莖ハ上方ニ數回又

狀ニ分岐シテ放射狀ニ列シ，枝皆其兩側ニ於テ密ニ相接シ一層ノ面ニ並列シテ薄キ葉片ヲナシ石灰質ヲ以テ固着ス；而シテ體ノ下部ハ楔形ニシテ上部ハ圓形ヲナシ往々數個ノ裂片ヲナス，其各裂片皆圓頭ニ終ル．

產地：潮線間ノ岩石ニ生ズ．　日向有明灣內一里崎（遠藤氏）．

分布：「バタビア」ライデン島；セーロン；マレー半島．

本種ハ元ジャバ附近ニテ Hombron 氏ノ採集シタルモノニ依リ Montagne 氏ガ 1842 年 Rhipidosiphon javensis トシテ記載シタルヲ初メトシ，其後曾テ發見セラレタルコトナカリシヲ以テ其マヽニ存シタリシガ，近頃 Gepp 女史ハ新ニ此ガ研究材料ヲ得テ攻査シタル結果，之ヲ Udotea 屬ニ合スノ至當ナルヲ發見セリ．　而シテ體ノ扇狀部ノ構造 Udotea glaucescens ニ酷似スト雖モ，該種ハ莖ノ構造數條ノ並行セル纖維ヨリ成リ多數ノ側枝ヲ有シテ石灰質ノ皮層ヲ被ムルコト全ク本種ノ單管ナル莖ト同ジカラザルヲ以テ異ナリトス；然レドモ其甚シク近緣ノモノナルコトハ Ferguson 氏ノ Ceylon Algae No. 439 ニ Udotea glaucescens var. tenuis（又ハ tenuior）Grun. トシタルモノハ實ニ本種ニ外ナラザルヲ以テモ知ルニ難カラズトス．

第 XLV 圖版，1-7 圖．**1**：*a-b*，Udotea javensis (Mont.) Gepp，ひめいてう，ノ體，$\frac{1}{1}$.—**2**：體ノ一ヲ廓大シタルモノ，$\frac{1}{1}$.—**3**：體ノ頂部ヲ表面ヨリ見タルモノ，$\frac{58}{1}$.—**4**：體ノ中央部ノ表面；*c*, *c*, 石灰質 $\frac{220}{1}$.—**5**：石灰質ヲ除キタル絲狀細胞ニシテ其分岐ヲ示スモノ，$\frac{220}{1}$.—**6**：體ノ下部ニシテ莖ト根トヲ示ス，$\frac{54}{1}$.—**7**：體ノ橫斷面；*c*, *c*, 石灰質；細胞ノ徑ハ 35 μ アリ，$\frac{340}{1}$.

Udotea conglutinata (Soland.) Lamour.

Nom. Jap.: *Hagoromo.*

PL. XLIV, Fig. 11-12; PL. XLV, Fig. 8-13.

Udotea conglutinata (*Soland.*) *Lamour. Polyp. flex. p. 312*; *Id. Expos. Meth. p. 28, t. 25, f. 7*; Kuetz. Sp. Alg. p. 502; J. Ag. Till Alg. Syst. VIII, p. 72; Harv. Ner. Bor. Amer. III, p. 27, t. 40, C; De Toni Syll. Alg. I, p. 507; *Udotea* sp. 岡村，日本藻類名彙 p. 186; *Corallina conglutinata Soland in Ellis Zooph. p. 125, t. 27, f. 7.*

Hab.: Riukiu (col. Kuroiwa, Ando and Kanagusuku).

Pl. XLV, Fig. 8-13. Fig. **8**: two fronds of *Udotea conglutinata* (Soland.) Lamour. fused together, in nat. size.—Fig. **9**: longitudinal section of stem decalcified, slightly magd.—Fig. **10**: portion of the cross-section of stem, decalcified, $\frac{220}{1}$.—Fig. **11**: terminal branchlets of cortical filament of stem, showing thickness of stratified cell-wall, $\frac{860}{1}$.—Fig. **12**: portion of cross-section of stem; *c*, *c*, calcareous deposit, $\frac{220}{1}$.—Fig. **13**: filament of upper portion of frond showing constrictions, decalcified, $\frac{220}{1}$.

Pl. XLIV, Fig. 11-12. Fig. **11**: surface view of calcified frond, $\frac{54}{1}$.—Fig **12**: filament of upper portion of frond decalcified, showing its ramification, $\frac{300}{1}$.

Udotea conglutinata (Soland.) Lamour.

はごろも　岡村稱．

第 XLIV 圖版，11-12 圖；第 XLV 圖版，8-13 圖．

體ハ扇狀ニシテ下部腎臟形ヲナシ，圓柱狀一扁圓ノ莖ヲ有シ，全部石灰質ヲ被ムリテ淡綠色ナリ．　扇狀部ハ屢々叉狀

ニ分岐セル絲狀細胞ノ放射狀ニ列セルモノヨリ成リ，多少互ニ並行シテ走リ，數層ヲナシテ相密着シ，多少屈曲シ，石灰質ヲ以テ蔽ハル；皮層ハ之ヲ存スルコトナシ．體ノ大サハ 2-6 cm ニシテ莖ハ 1-1.5 cm. 長ク，1.5-2 mm. 太シ．

産地：琉球(黒岩氏，安藤氏，金城氏)．

分布：印度洋．

第XLV圖版，8-13圖．**8**：Udotea conglutinata (Soland.) Lamour. ノ二個體ノ癒合シタルモノ，$\frac{1}{1}$—**9**：莖ノ縱斷面，石灰質ヲ除キタルモノ，廓大．—**10**：莖ノ橫斷面ノ一部，石灰質ヲ除キタルモノ，$\frac{220}{1}$.—**11**：莖ノ皮部ノ小枝ノ頂部ニシテ層成セル細胞膜ノ厚ミヲ示ス，$\frac{860}{1}$.—**12**：莖ノ橫斷面ノ一部，石灰質ヲ存スルマヽ；*c*, *c*, 石灰質，$\frac{220}{1}$.—**13**：體ノ上部ノ絲ノクビレヲ示ス，石灰質ヲ除キタルモノ，$\frac{220}{1}$.

第XLIV圖版，11-12圖：**11**：石灰質ヲ存スル體ノ表面，$\frac{54}{1}$.—**2**：體ノ上部ノ絲ヲ石灰質ヲ除キテ其分岐ヲ示ス，$\frac{390}{1}$.

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品　第I-II帙　No. 1-100.

FASCICULUS I-II. No. 1-100.

Price (exclusive of postage) of every Fasciculus :—30 mk. = 30 shill. = 37.5 fr = $7,50.

Subscribers to be addressed to the auther : No. 4, Ni-chomé, Shin-Ogawa-machi, Ushigomé, Tokyo.

Foreign Agent : **Theodor Oswald Weigel,** Leipzig, Königsstr. 1, Deutschland.

各帙：金拾貳圓五十錢（外ニ郵送料）.

岡村金太郎：—東京牛込新小川町二丁目四番地（口座 10936）.

動物標本社：—東京神田五軒丁.

NOTICE.

Price (inclusive of postage) of the ICONES which contains 5 plates in every number is 3.50 Mk for abroad.

Remittances from abroad to be made by Postal Money Order, payable to

K. Okamura, No. 4, Ni-chomé, Shin-Ogawamachi, Ushigomé, Tokyo.

Z. P. Maruya & Co., 14-16, Nihonbashi Tōri Sanchōme, Tokyo.

Foreign Agent : **Theodor Oswald Weigel,** Leipzig, Königsstrasse 1, Deutschland.

定價：　各集圓版五枚ニ付キ壹部金壹圓（外ニ郵稅）

明治四十一年十二月廿四日發行
明治四十一年十一月廿五日印刷

不許複製

著作兼發行者　岡村金太郎　東京牛込區新小川町二丁目四番地　振替貯金口座壹〇九番六
印刷者　中村彌助　東京市京橋區日吉町十番地
印刷所　近藤商店活版部　東京市京橋區日吉町十番地
發賣所　丸善株式會社　東京市日本橋區通三丁目　大坂市心齋橋筋博勞町四丁目　振替貯金口座（東京五番大坂七四番）

日本藻類圖譜

第一卷　第十集

理學博士　岡村金太郎著

ICONES OF JAPANESE ALGÆ.

Vol. I. No. X.

BY.

K. Okamura *Rigakuhakushi.*

Contents of No. X. (Pl. XLVI—L.)

Gelidium subcostatum Okam.	ひらくま.
Ptilota pectinata (Gunn.) Kjellm.	くしべにひば
Ptilota asplenioides (Turn.) Ag.	かたわべにひば
Ptilota californica Rupr.	かしわばべにひば
Calosiphonia vermicularis (J. Ag.) Schm.	ぬめりぐさ
Ceramium Boydenii Gepp.	いぎす

Published

by

THE AUTHOR.

March, 1909.

Tokyo.

明治 43 3 16 内交

K. OKAMURA.

ALGAE JAPONICAE EXSICCATAE.

日本海藻標品　第二帙

FASCICULUS II.

51. Porphyra suborbiculata Kjellm.
52. Batrachospermum moniliforme Roth.
53. Batrachospermum virgatum (Kuetz.) Sirod.
54. Batrachospermum Gallaei Sirod.
55. Yatabella hirsuta Okam.
56. Endocladia complanata Harv.
57. Gigartina Teedii (Roth) Lamour.
58. Gigartina intermedia Suring.
59. Eucheuma spinosum (L.) J. Ag.
60. Ceratodictyon spongiosum Zanard.
61. Gracilaria confervoides (L.) Grev.
62. Hypnea seticulosa J. Ag.
63. Hypnea Saidana Holmes.
64. Gastroclonium ovale (Huds.) Kuetz.
65. Erythrocolon Muelleri (Sond.) J. Ag.
66. Nitophyllum uncinatum (Turn.) J. Ag.
67. Caloglossa Leprieurii (Mont.) J. Ag. Var. continua Okam. Nov. Var.
68. Caloglossa ogasawaraensis Okam.
69. Acrocystis nana Zanard.
70. Polysiphonia fragilis Suring.
71. Pterosiphonia pennata (Roth) Fkbg.
72. Symphyocladia Marchantioides (Harv.) Fkbg.
73. Rhodomela Larix (Turn.) Ag.
74. Herposiphonia fissidentoides (Holmes) Okam.
75. Heterosiphonia pulchra (Okam.) Fkbg.
76. Ptilota pectinata (Gunn.) Kjellm. f. typica Kjellm.
77. Carpoblepharis Schmitziana (Rbd.) Okam.
78. Ceramium clavulatum Ag.
79. Microcladia corallinae (Mart.) Okam.
80. Campylaephora Hypnaeoides J. Ag.
81. Gloiopeltis cervicornis (Suring.) Schmitz.
82. Peyssonnelia caulifera Okam.
83. Corallina radiata Yendo.
84. Zonaria Diesingiana J. Ag.
85. Scytosiphon lomentarius (Lyngb.) J. Ag.
86. Endarachne Binghamiae J. Ag.
87. Cladosiphon decipiens (Suring.) Okam.
88. Cylindrocarpus rugosa Okam. Sp. Nov.
89. Leathesia difformis (L.) Aresh.
90. Mesogloea crassa Suring.
91. Chordaria abietina Rupr.
92. Ulva conglobata Kjellm.
93. Chaetomorpha crassa (Ag.) Kuetz.
94. Chaetomorpha spiralis Okam. Sp. Nov.
95. Caulerpa ambigua Okam.
96. Chlorodesmis comosa Bail. et Harv.
97. Codium adhaerens (Cabr.) Ag.
98. Rhipidiphyllon reticulatum (Ask.) Heydr.
99. Boodlea coacta (Dickie) Murr. et De Toni.
100. Brachytrichia Quoyi (Ag.) Born. et Flah.

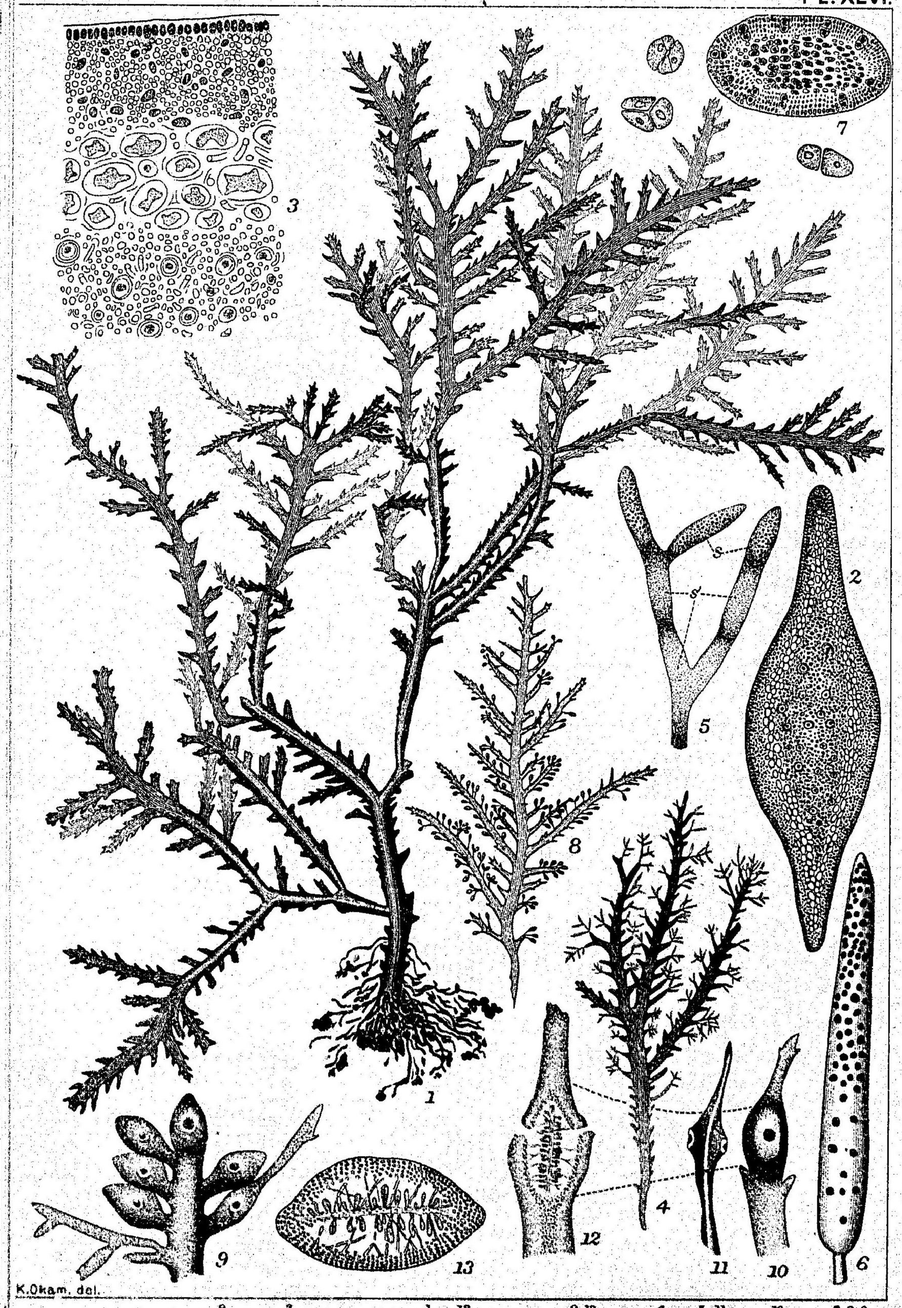
NOTICE.

Price (exclusive of postage) of every Fasciculus:—30 mk. = 30 shill. = 37.5 fr. = $ 7.50.

Subscribers to be addressed to the author:

No. 4, Ni-chomé, Shin-Ogawamachi, Ushigome, Tokyo, Japan.

第四十六圖版 PL. XLVI.



Gelidium subcostatum Okam. ひらくさ.

Gelidium subcostatum Okam.

Nom. Jap.: *Hira-kusa.*

PL. XLVI.

Gelidium subcostatum Okam. in Schmitz's Neue japanische Florideen von K. Okamura (Hedwigia Bd. XXXIII, 1894) p. 1. Taf. X); 岡村, 日本藻類名彙 p. 21.

Diagn. "Frond compressed two-edged, distichously pinnate; main branches distinctly midribbed with acute axils. Tetraspores cruciate in ciliform simple or branched pinnae. Cystocarps oval, immersed below the apex of pinnae, bilocular."—*Okam. l.c.*

Plant of the present species often attains 1 metre or more in height.

Hab.: On rocks, stones etc. in deep waters; Provs. Hiuga, Shima, Idzu, Awa and Sagami. Fruits:—late spring to summer.

PL. XLVI. Fig. **1**: sterile frond of *Gelidium subcostatum* Okam., $\frac{1}{1}$.—Fig. **2**: cross-section of frond, magd.—Fig. **3**: portion of the cross-section of frond, magd.—Fig. **4**: portion of frond with etras poriferous ramuli, nat. size.—Fig. **5**: tetrasporiferous ramulus; *s*, sorus; *s'*, the same emptied, $\frac{5}{1}$.—Fig. **6**: tetrasporiferous ramulus, magd.—Fig. **7**: cross-section of a tetrasporiferous ramulus; 3 spores detached, magd.—Fig. **8**: portion of branch bearing cystocarps, nat. size.—Fig. **9**: cystocarps, $\frac{5}{1}$.—Fig. **10**: cystocarp viewed from surface, $\frac{5}{1}$.—Fig. **11**: the same as fig. 10 viewed laterally, $\frac{5}{1}$.—Fig. **12**: longitudinal section of the same cut through carpostomes, magd. —Fig. **13**: cross-section of a cystocarp magd.

PL. XLVI-L, Feb. 1909.

Gelidium subcostatum Okam.

ひらくさ.

第XLVI圖版.

Gelidium (てんぐさ屬) ノ性質ハ日本海藻圖說第一卷第一冊五頁ニアリ.

性質: 體ハ扁壓, 兩緣ニ薄ク, 兩緣ヨリ羽狀ニ分岐シ, 廣開ス; 主枝ハ明ニ中肋ヲ存シ, 腹銳角ナリ. 四分胞子囊ハ單條又ハ分岐セル纖細ナル小羽枝ニ生ジ, 十字樣ニ分裂ス. 囊果ハ卵形ニシテ小枝又ハ小羽枝ノ頂端下ニ膨大シ, 二室ヨリ成ル.

記載: 根ハ纖維狀ニシテ多ク枝ヲ分ツ. 體ハ扁壓ニシテ, 3-4 回兩緣ヨリ羽狀ニ分レ, 15-35 cm. 高ク, 罕ニ 1 m. ニ及ブモノアリ, 幅 2-5 mm. ニシテ, 明ニ中肋ヲ存ス, 而シテ體ノ下部ハ齡ト共ニ甚シク太シ. 枝ハ廣開シ, 伸長シ, 2-3 回羽狀ヲナス. 枝ノ稍大ナルモノハ凡テ中肋ヲ存ス; 中肋ハ漸次上方ニ消滅スルヲ以テ枝ノ上部及上部ノ枝ハ殆ド扁平トナル. 腹ハ皆銳角ナリ. 最末ノ小枝ハ尖銳ニシテ略ボ三角形ヲナス.

體ハ四層ヨリ成ル; 髓層ハ長キ透明ナル絲狀細胞ヨリ成リ, 之ニ次ゲニ圓形—多角形ノ細胞ヨリ成レル二三ノ層ヲ以テス, 而シテ皮下層ハ又長キ絲狀細胞ヨリ成リテ小サキ有色ノ細胞ト混在ス; 皮層ハ一層ノ有色細胞ヨリ成ル.

四分胞子囊ハ單條又ハ分岐セル纖細ナル小羽枝ニ密集シ, 皮層細胞中ニ埋在シテ十字樣ニ分裂ス. 囊果ハ卵形ニシテ小枝ノ頂端下ニ膨大シテ生ジ, 枝ノ兩面ニ隆起シ, 二室ヨリ成ル; 隔壁ハ縱ニシテ細キ絲狀細胞ヲ以テ之ト果皮トヲ結合ス. 果胞子ハ中央ナル隔壁ノ兩面ニ生ジ, 細キ珠柄ヲ有シ, 棍棒狀ナリ. 色ハ紫紅色ニシテ綠色又ハ黃色トナル. 質軟

Gelidium subcostatum Okam.

ひ ら く さ.

第XLVI圖版.

Gelidium（てんぐさ屬）ノ性質ハ日本海藻圖說第一卷第一冊五頁ニアリ.

性質: 體ハ扁壓，兩緣ニ薄ク，兩緣ヨリ羽狀ニ分岐シ，廣開ス；主枝ハ明ニ中肋ヲ存シ，腋銳角ナリ. 四分胞子囊ハ單條又ハ分岐セル纖細ナル小羽枝ニ生ジ，十字樣ニ分裂ス. 囊果ハ卵形ニシテ小枝又ハ小羽枝ノ頂端下ニ膨大シ，二室ヨリ成ル.

記載: 根ハ纖維狀ニシテ多ク枝ヲ分ツ. 體ハ扁壓ニシテ，3-4回兩緣ヨリ羽狀ニ分レ，15-35 cm. 高ク，罕ニ1 m. ニ及ブモノアリ，幅 2-5 mm. ニシテ，明ニ中肋ヲ存ス，而シテ體ノ下部ハ齢ト共ニ甚シク太シ. 枝ハ廣開シ，伸長シ，2-3回羽狀ヲナス. 枝ノ稍大ナルモノハ凡テ中肋ヲ存ス；中肋ハ漸次上方ニ消滅スルヲ以テ枝ノ上部及上部ノ枝ハ殆ド扁平トナル. 腋ハ皆銳角ナリ. 最末ノ小枝ハ尖銳ニシテ略ボ三角形ヲナス.

體ハ四層ヨリ成ル；髓層ハ長キ透明ナル絲狀細胞ヨリ成リ，之ニ次ジニ圓形—多角形ノ細胞ヨリ成レル二三ノ層ヲ以テス，而シテ皮下層ハ又長キ絲狀細胞ヨリ成リテ小サキ有色ノ細胞ト混在ス；皮層ハ一層ノ有色細胞ヨリ成ル.

四分胞子囊ハ單條又ハ分岐セル纖細ナル小羽枝ニ密集シ，皮層細胞中ニ埋在シテ十字樣ニ分裂ス. 囊果ハ卵形ニシテ小枝ノ頂端下ニ膨大シテ生ジ，枝ノ兩面ニ隆起シ，二室ヨリ成ル；隔壁ハ縱ニシテ細キ絲狀細胞ヲ以テ之ト果皮トヲ結合ス. 果胞子ハ中央ナル隔壁ノ兩面ニ生ジ，細キ珠柄ヲ有シ，棍棒狀ナリ. 色ハ紫紅色ニシテ綠色又ハ黃色トナル. 質軟

Ptilota pectinata (Gunn) Kjellm. くしべにひば Fig. 1-15.
Ptilota pectinata (Gunn) Kjellm. var. minor miyabe Fig. 16-17.

骨様ニシテ，乾燥スル時ハ紙ニ付着セズ.

産地：概子深處ニアリ. 日向，志摩，伊豆，相模，安房.

果實：暖春ヨリ初夏.

備考：本種ハてんぐさ屬 (Gelidium) 中中肋ヲ有スルヲ以テ他ト著シク區別スルニ足ル；尤モおにくさ (Gelidium japonicum (Harv.) Okam.) ニモ中肋アレドモ，體ノ形狀並ニ中肋ヨリ小枝ヲ副出スル性質アルニ依テ本種ト全ク同ジカラズ. 本種ハ凍瓊脂製造原料トシテ用キザルニハアラザレドモ品質佳良ナラズ.

第XLVI圖版. 1：ひらくさ，Gelidium subcostatum Okam.，ノ實ナキモノ，自然大.—2：體ノ稍下部ノ橫斷面，廓大.—3：體ノ橫斷面ノ一部，廓大.—4：四分胞子ヲ有スル小枝ヲ着ケタル枝ノ一部，自然大.—5：四分胞子群ヲ有スル小枝；*s*，子嚢群；*s*，胞子ノ脫出シタル部分，$\frac{5}{1}$.—6：四分胞子群ヲ有スル小枝，廓大.—7：四分胞子群ヲ有スル小枝ノ橫斷面；側ニ三個ノ四分胞子ヲ示ス；廓大.—8：嚢果ヲ有スル體ノ一部，自然大.—9：嚢果，$\frac{5}{1}$.—10：嚢果ヲ有スル小枝ヲ表面ヨリ見タルモノ，$\frac{5}{1}$.—11：同上ノモノヲ側面ヨリ見タルモノ，$\frac{5}{1}$.—12：果孔ヲ通シテ嚢果ヲ縱斷シタルモノ，廓大.—13：嚢果ノ橫斷面，廓大.

Ptilota pectinata (Gunn.) Kjellm.

Nom. Jap.: *Kushi-benihiba.*

PL. XLVII.

Ptilota pectinata (Gunn.) Kjellm. Alg. of Arct. Sea p. 174; de Toni Syll. Alg. IV, p. 1377.—*Ptilota serrata* Kuetz.; J. Ag. Sp. Alg.

II, p. 96 ; Id. Epicr. p. 76; Harv. Ner. bor. Amer. II, p. 222.—*Ptilota plumosa δ serrata* Kuetz. Sp. Alg. p. 670; Id. Tab. Phyc. XII, t. 55, f. e-f.—*Ptilota plumosa var. asplenioides* Ag., Lyngb. Hydrophyt. Dan. p. 38, t. 9, f. A.—*Fucus pectinatus Gunn. Fl. Nov. II, p. 122.*—*Ptilota plumosa β Pt. formosa* Kuetz. Sp. Alg. p. 669.—*Plumaria pectinata var. integrrima* Rupr. Alg. Ochot. p. 334.

Hab.: On rocks between tide-marks. Isl. Urupp ; Urakawa and Otaru (Hokkaido) ; Prov. Rikuchu.—Antheridia : Aprile (Urakawa) ; tetraspores and cystocarps : summer.

Remarks. Antheridia are mostly produced from the pinnulae arising from the inner side of compound pinnae; sometimes they are formed from those of the outer, but this is rarer in case and few in number. Again they are transformed from marginal teeth of simple pinnae; in this case, the maginal teeth develope into pinnated ramuli (fig. 10). The development of antheridial pinnulae is exactly same as that of tetrasporic pinnae, as it is easily seen by comparing fig. 7 and 12.

f. litoralis Kjellm. the Algae of the Arctic Sea p. 174, Tab. 15, fig. 2-5.

Hab.: Otaru and Mashiké (Hokkaido) ; Kesennuma (Prov. Rikuzen).

PL. XLVII. Fig. **1**: frond of *Ptilota pectinata* (Gunn.) Kjellm. in nat. size.—Fig. **2**: cross-section of the thicker portion of a branch, ca. $\frac{50}{1}$.—Fig. **3**: portion of a sterile branch, $\frac{50}{1}$.—Fig. **4**: deeply serrated pinna (from Isl. Urupp.), $\frac{22}{1}$.—Fig. **5**: branch with tetrasporic pinnae, $\frac{50}{1}$.—Fig. **6**: upper pinna of tetrasporic frond, $\frac{22}{1}$.—Fig. **7**: beginning of a tetrasporic pinna, $\frac{240}{1}$.—Fig. **8**: tetrasporic pinna, $\frac{50}{1}$.—Fig. **9**: pinnulae and pinnellae ripening tetraspores, $\frac{220}{1}$.—Fig.

10: simple pinna bearing antheridia transformed form marginal teeth, $\frac{33}{1}$.—Fig. **11**: compound pinna bearing antheridia, $\frac{54}{1}$.—Fig. **12**: beginning of antheridial pinnellae transformed from a pinnula of a compound pinna, $\frac{220}{1}$.—Fig. **13-14**: upper and lower portion of one and the same branch bearing cystocarps, $\frac{12}{1}$.—Fig. **15**: cystocarp, $\frac{33}{1}$.

Fig. **16**: portion of the frond of *Pt. pectinata f. litoralis* Kjellm. in nat. size.—Fig. **17**: portion of the branch, $\frac{12}{1}$.

Ptilota pectinata (Gunn.) Kjellm.

くしべにひば　岡村稱.

第XLVII圖版.

Ptilota C. Ag. (べにひば屬) ノ性質ハ日本海藻圖說第一卷第四冊六十七頁ニアリ.

體ハ複羽狀ニシテ多少明ナル一條ノ幹ヲ有スルカ又ハ幹ハ下部僅ニ殘存シテ其上部ヨリ多數ノ主枝ニ分レ, 主枝各幹ノ如キ狀ヲ呈ス; 主枝ハ始メ扁平ニシテ兩緣ニ溝ク, 中肋ヲ存スレドモ中肋ハ後其部ノ老成スル時ハ太クナリテ不明トナル, 而シテ漸次枝ヲ分チ, 枝ハ皆對生ス. 羽枝(即チ各枝ノ兩緣ヨリ羽狀ニ出ル枝)ニ二樣アリテ對生シ, 一ハ單條ニシテ其成長ニ限リアリ, 一ハ複性ニシテ成長ニ限ナク其上部ヨリ更ニ枝ヲ分ツ. 單性ノ羽枝即有限枝ハ其緣邊鋸齒若クハ櫛齒狀缺刻ヲ有シ, 複性ノ羽枝即無限枝ハ下部羽狀ヲナサヽレドモ上部ハ羽狀ニ分枝シ, 小羽枝ハ廣キ基部ヲ以テ披針狀ヲナス, 其形單性ノ羽枝ト同ジクシテ小サク, 全部皮層細胞ヲ以テ蔽ハル, 而シテ複性ノ羽枝ハ互生ス. 單性ノ羽枝ノ缺刻ハ其幼者ニアリテハ外側ノ方概テ深ケレドモ, 後內外トモ同樣トナル. 體ノ高サハ 10-20 cm. ニ達シ, 幅 15 mm. ニ達ス.——四分胞子群

ハ概ネ無限枝即複性ノ羽枝ヨリ發生スレドモ，時ニハ單性羽枝ノ鋸齒ヨリ發成スルコトアリ；群ハ胞子托狀ニシテ圓塊又ハ圓錐狀ヲナシ恰モ海綿質ノ如キ觀ヲ呈シ，中性ナル絲狀ノ枝ト混在シ，有柄ノ胞子ヲ着ク．胞子托ノ發生ハ第7圖ニ示ス如ク始メハ正シク羽狀ヲナセル細胞列ヨリ成リ，後漸次伸長スルニ隨テ枝ヲ增シ以テ圓塊ヲナスナリ；其中胞子ヲ熟スルモノト熟セザルモノトノ別ヲ生ジ，以テ中性タルベキ絲狀ノ枝ヲナスナリ．精子器モ胞子托ト同樣ノ場所ニ生ズルコト第10-11圖ヲ見テ知ルベク，其發生モ亦之ト同ジキコト第12圖ヲ以テ知ルベシ．囊果ハ複性枝ニ生ジ單柄ヲ有シ，稍扁平ナル苞枝ヲ存シ，苞枝ハ5-7條ニシテ緣邊全緣又ハ鋸齒ヲ存ス．色鮮紅色．質軟キ軟骨質ナリ．

產地：潮線間ノ岩石ニ生ズ．得撫島，沙那，浦河，小樽，陸中．
精子器：—四月(浦河)；四分胞子及囊果：—夏季．

分布：北氷洋(ノルウエー，ホワキトシー)；オホーツク海；大西洋(グリーンランド，フエーレース島，ハリファクス，ヘルゴーランド等)．

f. litoralis Kjellm. 第XLVII圖版，16-17圖．

原種ヨリハ遙ニ細クシテ小サク單性羽枝ノ鋸齒及ビ複性羽枝ノ小羽枝ハ往々不完全ナリ．高サ6-10 cm.ニ達ス．

此形狀ノモノハ原種ト同一所ニ產シテ稍高潮線付近ニアリ．

產地：小樽及增毛；氣仙沼(陸前)．

第XLVII圖版．**1**：くしべにひば，Ptilota pectinata (Gunn.) Kjellm.，ノ體，自然大．—**2**：太キ枝ノ橫斷面，約$\frac{50}{1}$．—**3**：中性枝ノ一部，$\frac{50}{1}$．—**4**：鋸齒ノ深キ單性ノ羽枝(得撫島產)，$\frac{22}{1}$．—**5**：四分胞子群ヲ有スル枝，$\frac{50}{1}$．—**6**：四分胞子群ヲ有スル體ノ上部ノ羽枝，$\frac{22}{1}$．—**7**：

Ptilota Asplenioides (Turn) Ag. かたわべはひば.

四分胞子群トナルベキ羽枝ノ初歩ノ狀態, $\frac{240}{1}$.—**8**: 四分胞子群ヲ有スル羽枝, $\frac{50}{1}$.—**9**: 四分胞子嚢ヲ熟シタル小羽枝及ビ最小羽枝, $\frac{240}{1}$.—**10**: 緣邊ノ齒ヨリ變形シタル精子器ヲ有スル單性羽枝, $\frac{33}{1}$.—**11**: 精子器ヲ有スル複性ノ羽枝, $\frac{54}{1}$.—**12**: 複性羽枝ノ小羽枝ノ更ニ分岐シタル最小羽枝變ジテ精子器トナレルモノヽ初歩, $\frac{220}{1}$.—**13-14**: 嚢果ヲ有スル同一ノ枝ノ上部ト下部, $\frac{12}{1}$.—**15**: 嚢果, $\frac{33}{1}$.

16: f. litoralis Kjellm. ノ體ノ一部, 自然大.—**17**: 枝ノ一部, $\frac{12}{1}$.

Ptilota asplenioides (Turn.) Ag.

Nom. Jap.: *Katawa-benihiba.*

PL. XLVIII.

Ptilota asplenioides (*Turn.*) *Ag. Sp. I, p. 387;* J. Ag. Sp. Alg. II, p. 98; Id. Epicr. p. 77; De Toni Syll. Alg. IV, p. 1379.—*Fucus asplenioides* Turn. Hist. Fuci t. 62.—*Rhodocallis asplenioides* Kuetz. Sp. Alg. p. 671; Id. Tab. Phyc. XII, t. 58.—*Pterota asplenioides* Cram. Ceram. p. 46, t. VII, fig. 6-10.

Hab.: On rocks between tide-marks. Isl. Shimushu; Isl. Urupp; Isl. Kabafuto; Provs. Nemuro, Kushiro and Hidaka (Hokkaido).

PL. XLVIII. Fig. **1**: tetrasporic frond of *Ptilota asplenioides* (Turn.) Ag. in nat. size.—Fig. **2**: younger branches shooting forth from the frond of the last year, $\frac{8}{1}$.—Fig. **3**: cross-section of 2-years old frond, $\frac{22}{1}$.—Fig. **4**: half of the longitudinal section of frond; *a*, the central axis, $\frac{91}{1}$.—Fig. **5**: portion of the cross-section of frond, showing the medullary filaments around the axis, *a*, $\frac{390}{1}$.—Fig. **6**:

portion of sterile frond (from Isl. Kabafuto), $\frac{12}{1}$.—Fig. **7**: upper portion of a branch of tetrasporic frond, $\frac{12}{1}$.—Fig. **8**: portion of a compound pinna which is transformed into tetrasporic ramuli, $\frac{300}{1}$.—Fig. **9**: fully formed tetrasporic pinnae, $\frac{54}{1}$.—Fig. **10**: cross-section of a tetrasporic pinna, $\frac{230}{1}$.—Fig. **11**: portion of the tetrasporic pinnellae, $\frac{220}{1}$.—Fig. **12**: portion of a branch bearing cystocarps, $\frac{8}{1}$.—Fig. **13**: cystocarp, $\frac{54}{1}$.—Fig. **14**: one of involucres detached and spread out by pressing (from Isl. Kabafuto), $\frac{91}{1}$.—Fig. **15**: portion of the same, $\frac{300}{1}$.

Ptilota asplenioides (Turn.) Ag.

かたわべにば.

第XLVIII圖版.

體ハ複羽狀ニシテ下部概ネ多少明ナル一條ノ短キ幹ヲナシ，多數ノ主枝ニ分レ，主枝各幹ノ如キ狀ヲ呈スルコトくしべにばニ同ジ，而シテ本植物ハ多年生ナルヲ以テ老者ハ體ノ下部時ニ甚シク肥大シテ幅3 mm.ニ達シ高サ30 cm.余ニ達ス．主枝ハ扁平ニシテ兩緣ニ薄ク中肋ヲ存スレドモ，中肋ハ只中央線ノ少シク肥厚セルノミニシテ中肋ノ如クナラズ，而シテ羽狀ニ分枝シ，枝ノ配置大小不規則ナリ．羽枝即チ枝ノ兩緣ヨリ出ルモノハ對生ニシテ二種アリ，一ハ單性ニシテ一ハ複性ナリ．單性ノ羽枝ハ概ネ大ニシテ分枝スルコトナク，複性ノ羽枝ハ小ニシテ羽狀ニ分枝スレドモ，往々甚ダ微小ニシテ不明ナルコトアリ；故ヲ以テ羽枝ハ外見上屢々互生ノ如ク見ユ；而シテ複性ノ羽枝ハ往々數個同一側ニ並列ス．單性ノ羽枝ハ全緣若クハ鈍鋸齒ヲ存シ，葉狀ヲナス．——四分胞子群ハ概ネ複性ノ羽枝ヨリ變ジ，群ハ圓塊又ハ俵狀ノ胞子托狀ニシテ其發生ノ狀況及ビ成熟セルモノノ構造等ハくしべにばノ條下ニ說キ