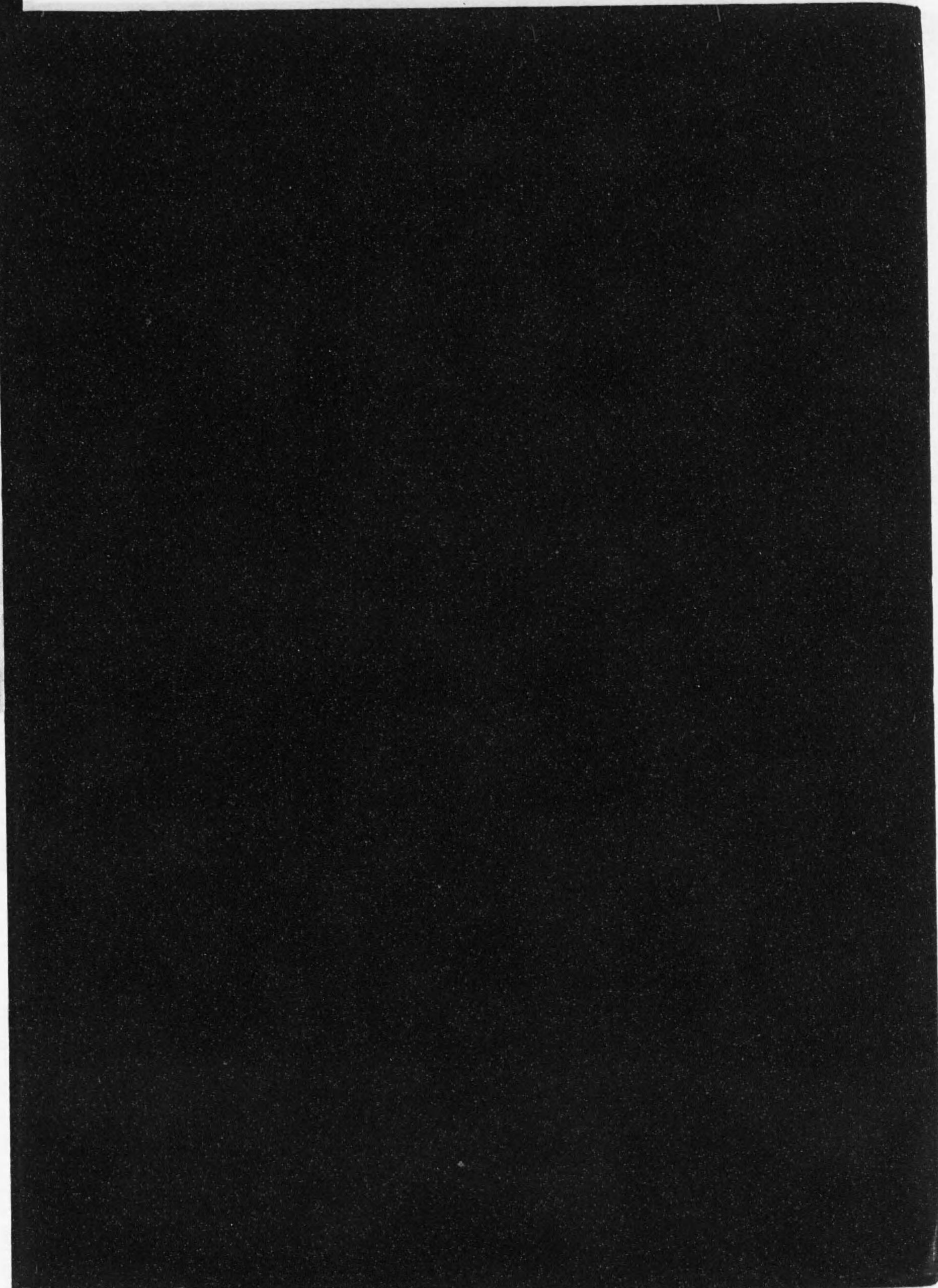




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# 日本藻類圖譜

第六卷 第三集

理學博士 岡村金太郎 著

## ICONES OF JAPANESE ALGÆ

Vol. VI. No. III.

BY

K. Okamura *Rigakuhakushi*

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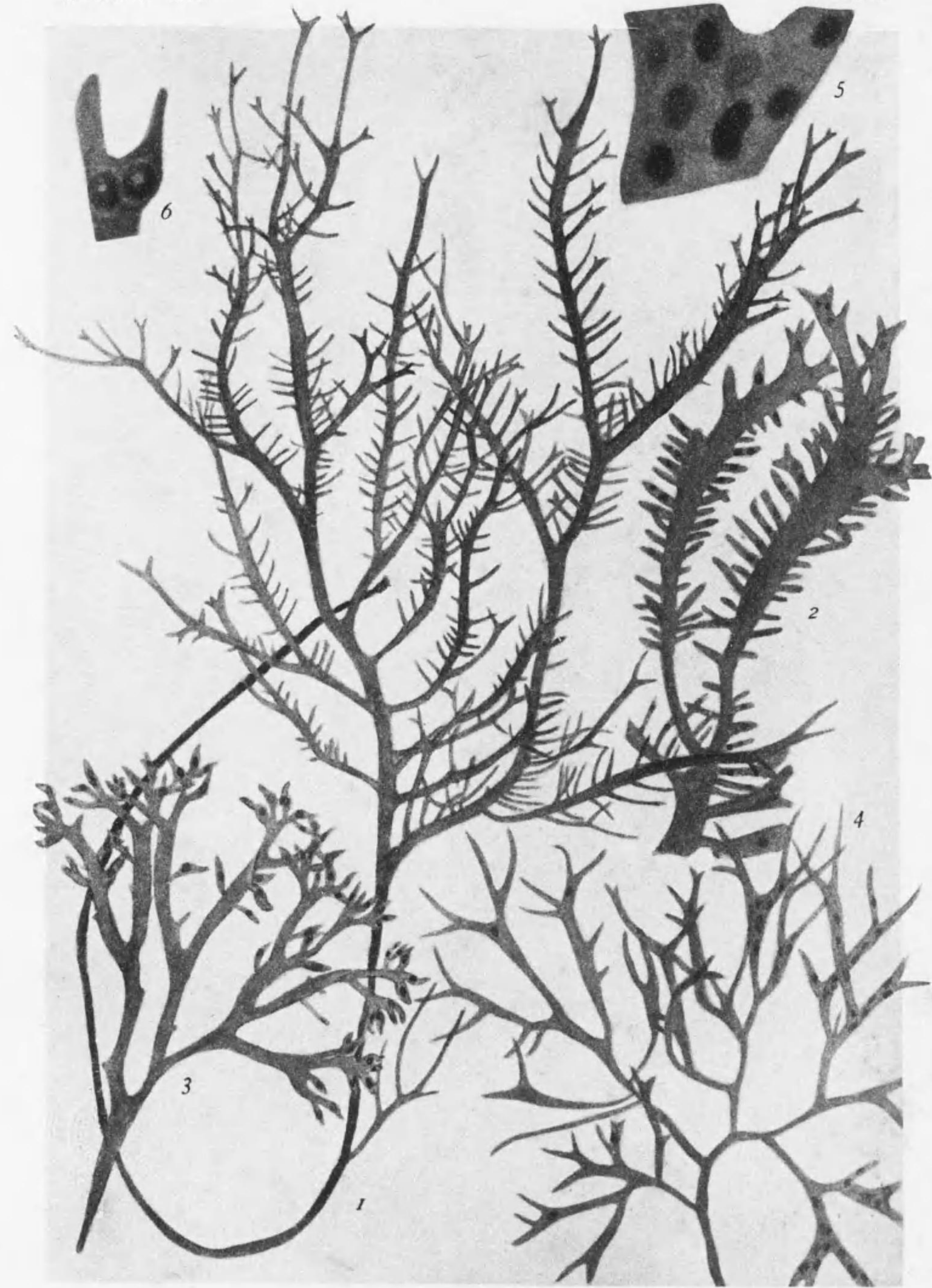
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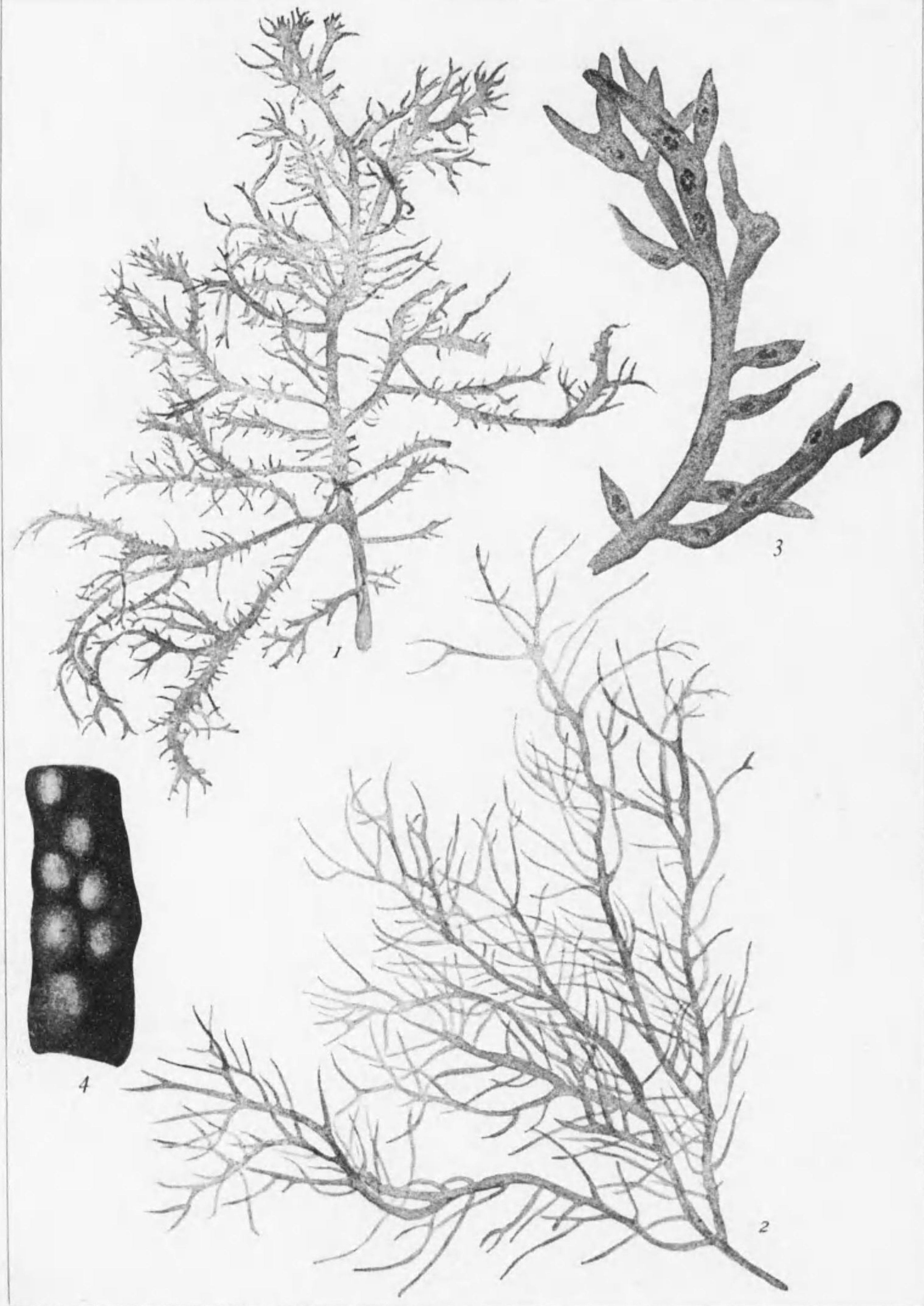
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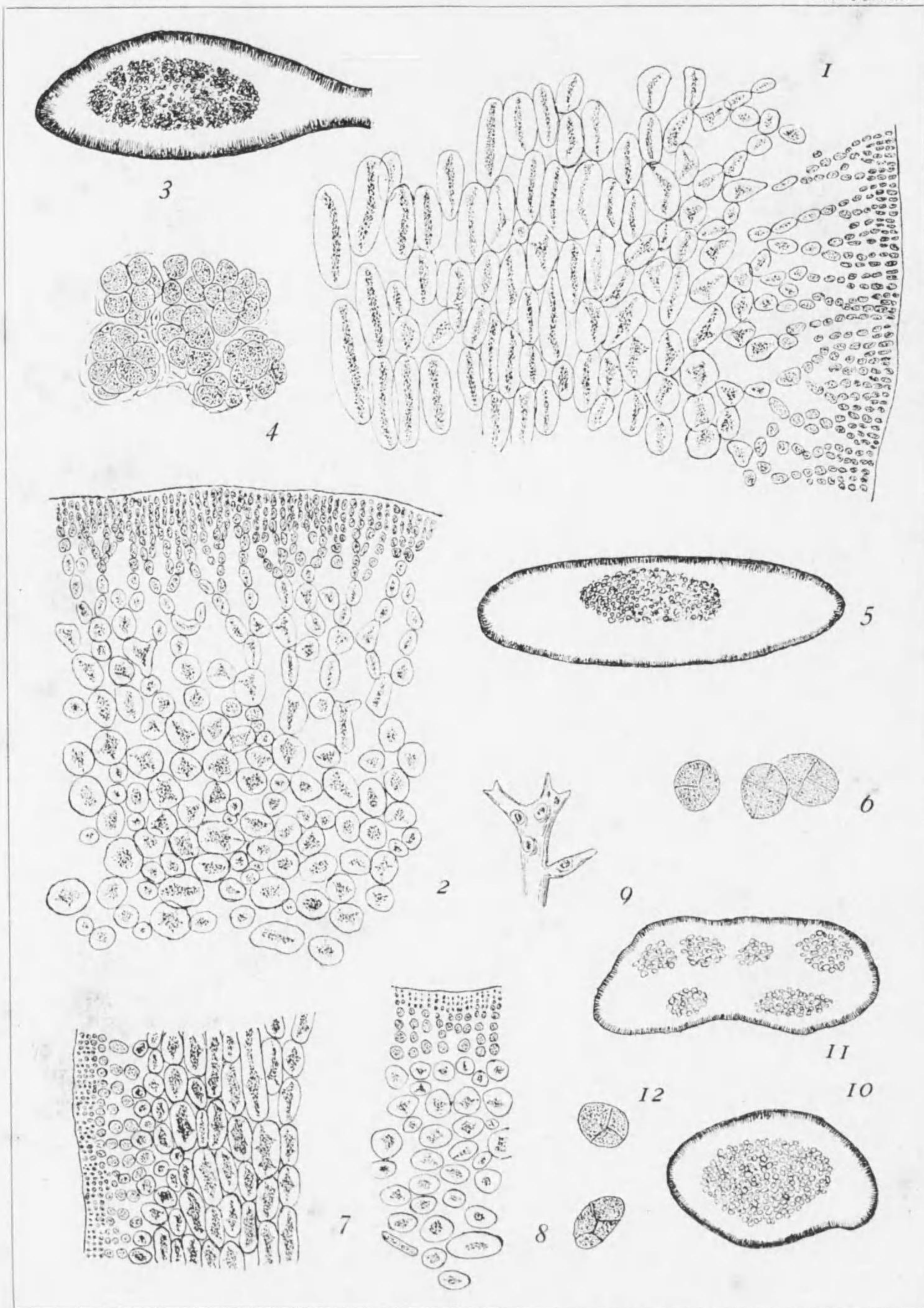


*Chondrus pinnulatus* (Harv.) Okam.

ひらことぢ

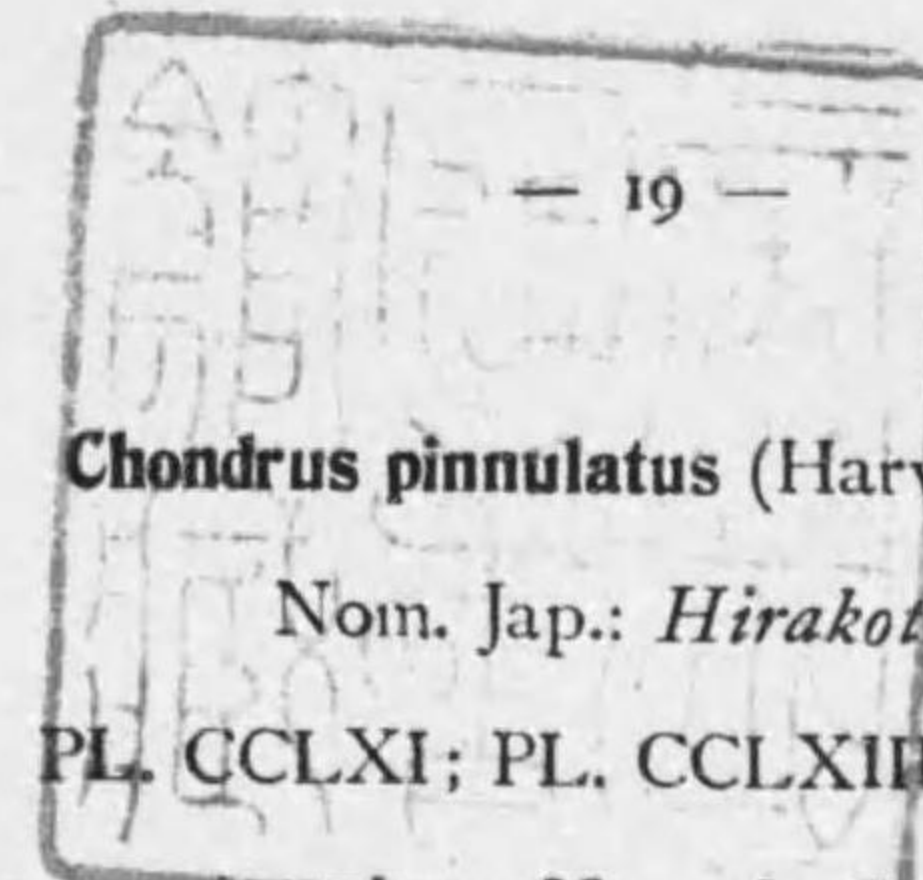


*Chondrus armatus* (Harv.) Okam.  
とげつのまた



Chondrus pinnulatus (Harv.) Okam. ひらくとち Fig. 1-6.  
 Chondrus armatus (Harv.) Okam. とげつのまた Fig. 7-12.

39-110



*Chondrus pinnulatus* (Harv.) Okam.

Nom. Jap.: *Hirakotodi*.

PL. CCLXI; PL. CCLXIII, Fig. 1-6.

*Gymnogongrus pinnulatus* Harv. in Gray's List of plants collected in Japan, p. 332; Martens Tange v. Preus. Ost Asien, p. 133; J. Ag. Epicirisis p. 214 (nomen); De Toni Syll. Alg., IV, p. 253; Yendo Kaisan Shokubutsugaku, p. 619, f. 176; Okam. Nippon Sorui-Mei-i (2<sup>nd</sup> edit.) p. 33.

*Fronde* caespitose, rising from a common scutate disc, high, broadly linear, compressed and dichotomous. The lower portion of the frond is naked and stem-like for a long distance in a well-grown, tall frond, but not so long in general, and the basal portion is subterete for a short distance (2-3 mm.) The ramification is regularly dichotomous in some fronds, but usually more or less irregular, being furnished with pinnately arising dichotomous branches. Branches are widely patent with round axil, more or less distantly forked and a little expanding beneath forks in somewhat cuneate manner. Proliferations are pinnately arranged in short distances along both sides of branches and are mostly simple or once-forked, very rarely palmately parted. They are compressed and more or less broadly linear with not-constricted base, but in those bearing cystocarps the base is narrowed. They are 5-15 mm. long in usual forms, often attaining 3-4 cm. with the breadth of 3-5 mm., and some of them may develop to normal branches. Very rarely they are proliferated from the surfaces of fronds, while there are others entirely destitute of them. Apices of branches and of proliferated ones are acute or bifurcated, but not without those having blunt apices. Fronds attain the height of 15-20 cm in usual cases and well developed ones 30-45 cm., while smaller ones 8-10 cm.; the breadth of segments attains usually 2-3 mm., but broader ones 8-10 mm. *Sori* of *tetraspores* spot-like, elliptic or oblong, scattered over proliferated branches and the upper portion of branches, very slightly



swollen out. *Cystocarps* large and elliptical, slightly elevated and formed in a few numbers in lateral pinnae. *Colour* dark purplish red, fading to yellowish. *Substance* cartilaginous and the plant does not adhere to paper in drying.

*Hab.*: east and west coasts of Karafuto (Saghalien), Sakaehama (J. Ikari); Tartar Str., Hoie Bay (col. Arseniew, 6, June, 1909, with cystocarps, probably kept in the Harb. University of St. Petersburg); Etorofu (T. Kitahara) and Shikotan Isls.; Prov. Nemuro, Kushiro, Hidaka, Iburi; Atsuta (S. Kurakami) and Sozanbetsu (Prov. Teshiwo, S. Kurakami), Zenibako (H. Yagi), Minato (Pref. Awomori), Matsushima (Miss. Wainright), Chosen. Fruits of both kinds: August.

The present plant is widely distributed in Hokkaido, Karafuto (Saghalien) and the southern islands of the Kurile and runs down as far south as Matsushima. Plants in the south-eastern coast of Hokkaido, especially those from Prov. Hidaka are well developed attaining the height of 30-45 cm., while those from the western coast are not so long, being 10-15 cm. in height, less broader than the eastern forms, and ramify dichotomously from a short distance from the root. Of course there are many intermediate forms between the eastern and western forms, and some have a form even reminding the habit of the plant illustrated in the next plate *i.e.* *Chondrus armatus* (Harv.) Okam.

At a glance, the sterile plant represents in its cross section the structure like *Gymnogongrus*; but carefully studying, the tissue is not regularly parenchymatic as in that genus, but cells are loosely set like *Chondrus*, and the longitudinal section of frond at once shows the structure of that genus. The existence of tetrasporic sori in infra-cortical layer tells us the nature of *Chondrus*.

The locality, Boshyu, quoted in De Toni Syll. Alg., *l.c.* is wrong as the plant does not grow more south than Kinkwasan.

In making this determination I had no facility to make comparison with the authentic specimens or any reliable ones, but I made only from

the descriptions given in Harvey's *l.c.* and the illustration given in Yendo's *l.c.*

PL. CCLXI. Fig. 1: sterile frond of *Chondrus pinnulatus* (Harv.) Okam., from Sarufuto, nat. size.—Fig. 2: portion of a cystocarpic frond from Kushiro, nat. size.—Fig. 3: cystocarpic frond from Muroran, nat. size.—Fig. 4: tetrasporic frond from Atsuta, nat. size.—Fig. 5: sori of tetrasporangia, slightly magd.—Fig. 6: cystocarps, slightly magd.

PL. CCLXIII, Fig. 1-6. Fig. 1: longitudinal section of the frond of *Chondrus pinnulatus* (Harv.) Okam., <sup>245</sup>/<sub>1</sub>.—Fig. 2: cross section, <sup>245</sup>/<sub>1</sub>.—Fig. 3: cross-section of cystocarp, <sup>28</sup>/<sub>1</sub>.—Fig. 4: portion of the nucleus, <sup>240</sup>/<sub>1</sub>.—Fig. 5: cross-section of tetrasporiferous branch, <sup>21</sup>/<sub>1</sub>.—Fig. 6: tetraspores, <sup>200</sup>/<sub>1</sub>.

***Chondrus armatus* (Harv.) Okam.**

Nom. Jap.: *togetsunomata*.

PL. CCLXII; PL. CCLXIII, Fig. 7-12.

*Cystoclonium* ? *armatum* Harv. in Gray List of plants collected in Japan, p. 332; J. Ag. Epicr., p. 239, Mart. Tange v. Ost Asien, p. 118; De Toni Syll. Alg., IV, p. 316 (except. syn.); Id. Phyc. Jap. Nov., 1895, p. 26 (except syn.); Okam. Nippon Sorui-me-i (2<sup>nd</sup> edit.) p. 36.

*Fronde* caespitose, more or less broadly linear, compressed or tereti-compressed, dichotomous, rarely with a more or less percurrent stem, the upper portion of which ramify dichotomously, usually very densely and irregularly branched in divaricato-dichotomous as well as pinnate manner. Branches are patent or very widely parted, and mostly become dichotomous upwards, ending in sharp points. They are plentifully furnished with short, lateral, subcylindrical branchlets which arise from not-constricted base and end in a spinose apex. They are spine like when short, and filiform when elongated, and remain simple or become irregularly

dichotomous. Very rarely they arise from flattened surfaces of branches. Fronds attain the height of 10–20 cm. and breadth of main branches 3–4mm., gradually becoming narrower upwards. Length of lateral branchlets varies from 10 to 20 mm. and some of them may grow up to the normal branches. *Tetrasporic sori* are minute dot-like, oblong or ovate, densely aggregated in branches, and present somewhat low wart-like appearance. *Cystocarps* forming oval or elliptical dots, being scattered in branches and branchlets, and slightly swollen out. *Colour* dark brown purple, fading to yellowish. *Substance* cartilaginous and the plant does not adhere to paper in drying.

*Hab.*: Mashike, Iwanai, Otaru-Takashima, Murolan, Shizukawa and Funakoshi (Prov. Rikuzen), Odima (Pref. Akita)

The localities mentioned in De Toni Syll. Alg., *l.c.* and Phyc. Jap., *l.c.* are wrong except Hakodate. The plant collected by Boyden at Weihai-wei (Gepp Chinese Mar. Algae, p. 163. n. 14, Journ. of Botany, 1904) needs revising study.

As stated under the preceding sp., *Chondrus pinnulatus* Okam., when the proliferated branchlets of that plant is subterete and pointed, then it looks like the present plant, and there are many forms which are difficult to distinguish one from the other. The present plant mostly grows in the Japan Sea along the western coast of Hokkaido and not in the eastern coast. Mr. Yamada told me that from his study on the type specimen of the cystocarpic frond of *Cystoclonium armatum* Harv. in the herbarium of Trinity College is nothing but the present plant, hence the name.

PL. CCLXII. Fig. 1: sterile frond of *Chondrus armatus* (Harv.) Okam., from Iwanai, nat. size.—Fig. 2: sterile frond from Muroran, nat. size.—Fig. 3: portion of cystocarpic frond,  $\frac{7}{1}$ .—Fig. 4: portion of tetrasporic frond,  $\frac{9}{1}$ .

PL. CCLXIII, Fig. 7–12. Fig. 7: longitudinal section of the frond of *Chondrus armatus* (Harv.) Okam., magd.—Fig. 8: cross section of frond,





Herposiphonia tenella (Ag.) Naeg. くものすひのごけ Fig. 1-9.  
 Herposiphonia insidiosa (Grev.) Falkenb. かぎひのごけ Fig. 10-16.  
 Taenioma perpusillum J. Ag. ひのづた Fig. 17-19.

magd.—Fig. 9: portion of a branch bearing cystocarps, slightly magd.—  
 Fig. 10: cross section of a branch bearing cystocarps,  $\frac{40}{1}$ .—Fig. 11:  
 cross section of a branch bearing tetrasporic sori,  $\frac{11}{1}$ .—Fig. 12: tetra-  
 sporon,  $\frac{245}{1}$ .

**Herposiphonia tenella** (C. Ag.) Naeg.

Nom. Jap.: *Kumonosu-himegoke*.

PL. CCLXIV, Fig. 1-9.

*Herposiphonia tenella* (Ag.) Naeg. *Polys. und Herps.* (1846), t. VIII, p. 2; Ambronn in Bot. Zeitung, 1880, p. 197, t. IV, f. 9, 13-17; Fkbg. in Engl. u. Prantl, nat. Pflanzenfam., (1897), p. 459, f. 258, A; Id. Rhodomelaceen, 1901, p. 304, t. 3, f. 13-17; De Toni Syll. Alg., IV, p. 1051; Boerg. Mar. Alg. of the Dan. W. Ind., 1920, p. 286, f. 287-289, p. 472, f. 430; Oltmanns Vorph. u. Biol. d. Algen, II, 1922, p. 327, f. 537, 1-4, p. 356, f. 561, 4.—Okam. Soruime-i (2<sup>nd</sup> edit.) p. 83.—*Herp. tenella* (Ag.) Ambronn; Taylor The Mar. Alg. of Florida, 1928, p. 177, pl. 25, f. 11.—*Polysiphonia tenella* J. Ag. Sp. II, p. 919; Kuet. Tab. Phyc., XIII, t. 30 B; Hauck Meeresalg. p. 239.

*Fronde* arachnoid, entangled on other algae. Plant has a decumbent, creeping, main stem, the summit of which is curved upward and inward, turning its curved side to the substratum. From the apical cell segments are cut off and young branches or branchlets begin to grow in monosiphonous manner and the segments are divided into the central and pericentral cells. From the foremost end of the pericentral cells of the main stem, long and simple rhizoids are set out on the ventral side of the stem. They are mostly wanting of a terminal disc, sometimes showing an irregularly formed one. Upon the dorsal side the main stem has two kinds of branches, one with indefinite growth able to grow out to a main filament like the mother stem, that is the "Langtrieb", and the other with limited growth, *i.e.* the "Kurztrieb". "Langtriebe" are placed alternate-

ly on both sides of the main stem, one upon each segment, in such a way that there are in the typical form always three segments between those bearing "Langtriebe." Upon the dorsal side of these three segments "Kurztrieb" arises from every segment alternately in two rows, in such a way that after a "Langtrieb" a "Kurztrieb" is developed from the opposite side of the stem; e.g., if this "Langtrieb" is found on the right side of the main stem (comp. fig. 4) the following "Kurztrieb" is placed on its left side, the next one is found on the right side, and the third again to the left, then follows a "Langtrieb" on the left side and so on.

At first young "Kurztriebe" are much more developed than young "Langtriebe" and are much curved toward the inrolled end of stem, so as to cover and protect it. "Kurztriebe" are simple and not branched. At the base they have few pericentral cells (usually 5, fig. 3); toward their apices the number of pericentral cells soon increases in the following segments, until the same number is arrived as found in the main stem, that is mostly 8 in ours. Every part of the frond is ecorticated. The number of segments in each "Kurztrieb" varies 11-14. The diameter of stem 50-70  $\mu$  and that of "Kurztrieb" 50  $\mu$ , and the length of the segments varies from subequal to one and half as long as the diam. In my plant typical "Haarblaettern" were wanting, but in fig. 7 a few secondarily formed ones are seen.

*Tetrasporangia* are formed in the "Kurztriebe" in a longitudinal row, one in each segment, having sporangia varying from 4 to 7 or more. *Cystocarps* unknown.

*Hab.*: entangled among other algae between tide marks. Ryukyu, Kashiwazaki, Prov. Iyo (M. Ogata), Ogasawaradima, Nihodima (near Hiroshima).

There are some irregularities in the arrangement of "Kurztriebe" and "Langtriebe"; for instance, in fig. 2 we see six segments between two "Langtriebe" on the same side of the main stem on the left side of

the figure, and in this frond the segment which would have a "Langtrieb" on the right side between those two "Langtriebe" has been suppressed. Moreover in some cases some segments are found to have no "Kurztrieb", thus reminding us the arrangement of *H. secunda*, as Boergesen demonstrated such cases in his *l.c.* p. 289.

PL. CCLXIV, Fig. 1-9. Fig. 1: frond of *Herposiphonia tenella* (C. Ag.) Naeg.,  $1/1$ .—Fig. 2: main stem having an irregular arrangement of branches and branchlets,  $100/1$ .—Fig. 3: portion near the apex of the frond of fig. 2, magd.; *a, b*, correspond to *a, b*, of fig. 2,  $240/1$ .—Fig. 4: main stem showing the typical arrangement of branches and branchlets,  $48/1$ .—Fig. 5: cross section of the frond,  $240/1$ .—Fig. 6: apical portion of the frond,  $500/1$ .—Fig. 7: secondarily formed "Haarblaettern",  $500/1$ .—Fig. 8: root fibre,  $100/1$ .—Fig. 9: "Kurztrieb" bearing tetrasporangia,  $40/1$ .

*Herposiphonia insidiosa* (Grev.) Fkgb.

Nom. Jap.: *kagihimegoke*.

PL. CCLXIV, Fig. 10-16.

*Herposiphonia insidiosa* (Grev.) Fkgb. Rhodomelaceen, 1901, p. 317; De Toni Syll. Alg., IV, p. 1058.—*Polysiphonia insidiosa* Grev. in J. Ag. Sp., II, p. 926 (non *Poly. insidiosa* Crouan Alg. Finist. n. 293).

Plant forms a low mass of fine filamentous fronds loosely entangled on other algae. It has a decumbent, creeping, main stem, the summit of which is curved upward and inward turning its curved side to the substratum. On the dorsal side of the main stem are emitted "Kurz-" and "Langtriebe" upward. "Kurztriebe" arise alternately from every segment and "Langtriebe" here and there, without any definite order in their arrangement. "Kurztriebe" stand facing to each other and both kinds of branches roll up strongly in a manner like screw in their upper portion. As the plant is very closely branched, the entire frond makes

up a thickly entangled mass. "Kurztriebe" are simple and attain 3 mm. in length in a longer ones. Number of segments of a "Kurztrieb" amounts to 25-26 with 9-12 pericentral cells, presenting 5-6 in surface view, and the plant is thickly ecorticated. Of the thickness of the main stem I measured in a frond the diam. of  $138 \mu$  and  $90 \mu$  in a "Kurztrieb". Plant is closely attached to the substratum by short root fibres, which arise from the middle portion of the segment of the dorsal side of the main stem and have a disc on their extremity. *Tetrasporangia* are formed in a longitudinal row in the "Kurztrieb" numbering to 11-12 or more. *Colour* red purple. *Substance* soft and the plant firmly adheres to paper in drying.

*Hab.*: entangled on other algae between tide marks; Enoshima.

PL. CCLXIV, Fig. 10-16. Fig. 10: frond of *Herposiphonia insidiosa* (Grev.) Fkbg., nat. side.—Fig. 11: portion of frond; *a*, seen from the lateral side; *b*, seen from the dorsal side; some "Langtriebe" omitted for the simplification of the figure,  $48/1$ .—Fig. 12 and 16: portion of the main stem,  $48/1$ .—Fig. 13: "Kurztrieb" bearing tetrasporangia,  $500/1$ .—Fig. 14: cross section of frond,  $240/1$ .—Fig. 15: cross section of a branch bearing tetrasporangia; *b*, basal cell of tetrasopre; *d, d*, cover cells,  $360/1$ .—

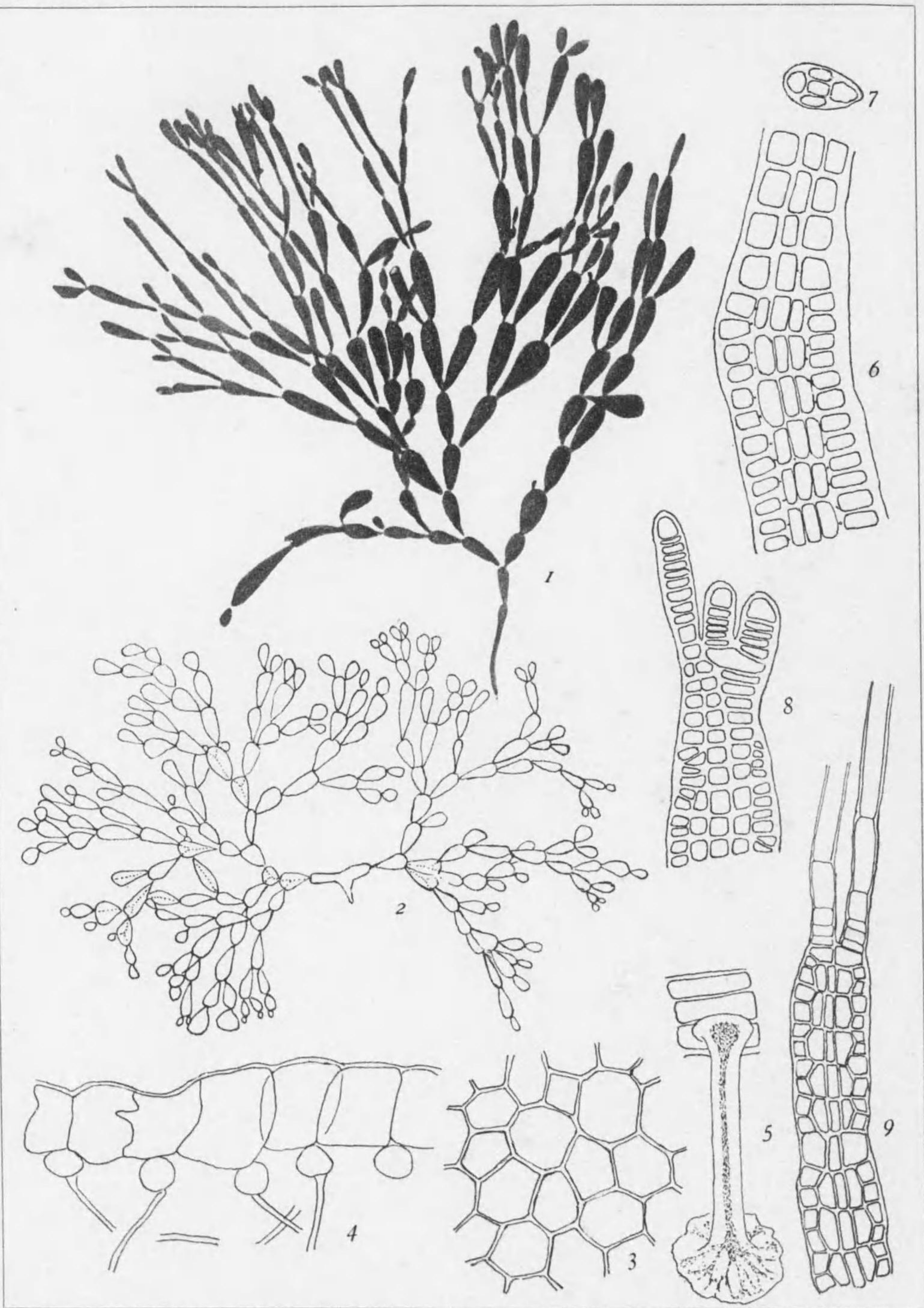
**Taenioma perpusillum** J. Ag.

Nom. Jap.: *himedzuta*.

PL. CCLXIV, fig. 17-19; PL. CCLXV, fig. 5-9.

*Taenioma perpusillum* J. Ag. Sp., II, p. 1257; De Toni Syll. Alg., IV, p. 732; Fkbg. Rhodomelaceen, p. 709, Pl. 15, f. 21-29; Boerges. Mar. Alg. Dan. W. Ind., Rhodophyc., p. 338, f. 337.—Okam. Nippon Sorui-me-i (2<sup>nd</sup> edit.) p. 61.—*Taenioma macrourum* Turn. in Born. et Thur. Notes Algol., Fasc. I, 1876, p. 69, T. XXV.—*Polysiphonia nana* Kuetz. Tab., Phyc., XIII, p. 10, T. 29, f. e-f.

*Fronde* forming a low mass of very fine, soft filaments. Plant has a



Scinaia moniliformis J. Ag. じゆざふさのり Fig. 1-4.  
Taenioma perpusillum J. Ag. ひめづた Fig. 5-9.

creeping, prostrate main stem, with indefinite growth, from which erect branches arise. The main stem is terete and its cross section shows four pericentral cells, presenting three cells in surface view. From its ventral side rhizoids are emitted downward, which often have a long, simple stalk, and end in a small scutate disc. On its dorsal side the main stem carries more or less ramified branches with definite growth. Some of these branches get indefinite growth and give rise to the ramification of the plant. Branches arise mostly intervening 4-6 or more segments. The main stem in the branches standing from the dorsal side of the prostrate main axis is terete like the stem of the main axis, and that branch carries 3-4 branchlets of definite growth. The branchlets are flat and the lowest segments remain terete; but in the following segments, two cells are divided off, above and below from the pericentral cells placed on the both sides of the flat branchlet, and no further division takes place. The young apex of flat branchlet carries long cylindrical monosiphonous filaments (usually two, sometimes three as in fig 8, two from not yet divided apical cell on the right side of the figure), and the basal segments of these filaments become meristematic cells of hairs, and in fully grown ones two long colourless hairs crown the flat branchlets (Fig. 9). Colour rosy red. Substance soft and plant closely adheres to paper in drying.

*Hab.*: on other algae between tide marks. Ogasawaradima, Kashiwazaki, (Prov. Iyo), Takanoshima (Prov. Boshyu).

PL. CCLXIV, Fig. 17-19. Fig 17: frond of *Taenioma perpusillum* J. Ag., nat. size.—Fig. 18: portion of frond,  $\frac{48}{1}$ .—Fig. 19: outline of a branch standing from the upper side of the main stem,  $\frac{28}{1}$ .

PL. CCLXV, Fig. 5-9. Fig. 5: root fibre,  $\frac{245}{1}$ .—Fig. 6: surface view of a flat branch,  $\frac{245}{1}$ .—Fig. 7: cross section of the upper portion of branch in fig. 6,  $\frac{245}{1}$ .—Fig. 8: apical portion of a branch,  $\frac{500}{1}$ .—Fig. 9: apex of a branch,  $\frac{240}{1}$ .



*Scinaia moniliformis* J. Ag.

Nom. Jap.: *dyudu-fusanori*.

PL. CCLXV, Fig. 1-4.

*Scinaia moniliformis* J. Ag. Till Alg. Syst., IV, p. 72, 1884; De Toni Syll. Alg., IV, p. 105, 1897; Setch. The Scinaia Assembl., 1914, p. 105, pl. 12, f. 31-32; pl. 13, f. 38.

Plant 6-12 cm. high, 9-11 times dichotomous, with a short stipe, strongly constricted like isthmus; joints oblong or oblong-cuneate (or obovate in shorter ones), 3-4 mm. in diam. (dried), and 5-15 mm. long, not globular, thin walled. In a larger frond joints are more elongated (10-15 mm. long), while in a smaller frond they are shortened and measure 3-4 mm. in length. Epidermis of colourless cells, *i.e.* utricles, broad palisade-like, flat-topped, 5-6-gonal in surface view. Hypodermis, of one layer of loosely placed, globular cells. Central strand appears like a slender central axis in dried specimens. *Cystocarps* scattered in the segments of the middle portion of the frond, subglobose in shape. *Colour* beautiful purple. *Substance* soft and the plant firmly adheres to paper in drying.

*Hab.*: Kashiwadima (Prov. Tosa, Y. Suyehiro), Hachidyo-dima.

Plant having shorter joints often appears like *S. hormoides* Setch., which however differs in having globular or pyriform joints, as it seems from the illustrations of Setch. *l.c.* pl. 12, f. 33 and pl. 13, f. 36. The present plant has oblong joints and neither globular nor pyriform ones, though there are a few irregularities but it is not the case in general.

PL. CCLXV. Fig. 1: cystocarpic frond of *Scinaia moniliformis* J. Ag. nat. size.—Fig. 2: frond having short joints, nat. size.—Fig. 3: surface view of epidermal cells,  $500/1$ —Fig. 4: cross section of the epidermis,  $500/1$ .

*Chondrus pinnatus* (Harv.) Okam.<sup>1)</sup>

ひらことち<sup>2)</sup>

第261圖版;第263圖版,1-6圖.<sup>3)</sup>

體ハ共同ノ盤狀根ヨリ叢生シテ立ち、高ク、廣キ線狀ニシテ、扁壓、叉狀ナリ。體ノ下部ハ充分成長シタル丈高キモノニ在リテハ長キ莖狀ヲナシテ裸出スレドモ一般ニハ左程長カラズ而シテ基部ハ2-3 mm.程ノ間稍圓柱狀ナリ。枝ハ或モノニテハ正シク叉狀ヲナセドモ、通常ハ多少不規則ニシテ、羽狀ニ並ベル叉狀ノ枝ヲ存ス。枝ハ圓キ腋ヲ以テ廣開シ、多少相距リテ分叉シ分岐點ノ下少シク擴ガリテ稍楔形ヲナス。副枝ハ枝ノ兩緣ニ沿フテ少距離ニ羽狀ニ列シ、概ネ單條又ハ一回分岐シ、極メテ稀ニ掌狀ヲナス、而シテ扁壓ニシテ多少潤キ線狀ヲナシ基部クビレズ、然レドモ囊果ヲ有スルモノハ基部細シ。副枝ハ通常5-15 mm.長ク、往々3-4 cmニ達シ、幅3-5 mm.アリ、其中或ハ常態ノ枝トナリテ伸ブ。副枝ハ稀ニ體ノ表面ヨリ出ルモノアリ又全ク副枝ヲ有セザルモノアリ。枝及ビ副枝ノ頂端ハ尖リ又ハ二裂スレドモ又鈍頭ナルモノナキニアラズ。體ハ通常15-20 cm.ノ高サヲ有スレドモ其能ク伸ビタルモノハ30-45 cm.ニ達シ、其小ナルモノハ8-10 cm.アリ。各部ノ幅ハ通常2-3 mm.ナレドモ廣キモノハ8-10 mm.ニ達ス。四分胞子群ハ點狀ニシテ橢圓形又ハ長橢圓形ヲナシ副枝及ビ枝ノ上部ニ散在シ、僅ニ膨レ出ヅ。囊果ハ大ニシテ橢圓狀ヲナシ、少シク膨レテ隆起シ、側部ノ羽枝ニ少數形成セラル。色ハ暗紫色ニシテ褪色スルトキハ黃色トナル。質ハ軟骨様ニシテ乾燥スルトキハ臺紙ニ附着セズ。

產地: 樺太東西兩岸, 榮濱(井狩), Hoie Bay (韃靼海峡), エトロフ島(北原), 色丹島; 根室, 釧路, 日高, 膽振; 厚田及天鹽初山別(倉上), 忍路(遠藤), 錢函(八木); 青森縣湊, 下風呂(遠藤), 松島。朝鮮。四分胞子及囊果: 一八月。

1) *Chondrus Stackh.*, つのまた屬, ノ性質ハ第四卷第二集. 39頁ニ在リ。  
2) 日本藻類名彙ニハひらこさいみトシタレドモ方言ヒラことちトアル故今之ヲ改ム。  
3) 和文ノ圖版ノ番號ハ衆人ノ了解ニ著シム由ナルヲ以テ本集ヨリ算用數字ニ改ム。

本種ハ弘ク北海道、樺太及南千島諸島ニ分布シ、南下シテ松島灣ニ到ル。北海道東南岸、殊ニ日高ノ産ハ能ク伸長シテ 30-45 cm. ニ達シ、西岸ノモノハ左程長大ナラズシテ 10-15 cm. ニ止リ、東方ノモノヨリ遙ニ狭ク、根ヨリ少距離ノ處ヨリ又狀ニ分岐ス。勿論東岸ト西岸トノモノノ間ニハ種々ナル中間形ヲ存シ、時トシテハ次ニ掲グル *Chondrus armatus* (Harv.) Okam. ニ酷似スルモノサヘアリ。

體ノ構造ハ其横斷面ヲ一見シタル所ニテハ *Gymnogongrus*, おきつのみ屬、ニ類スル如ク見ユレドモ仔細ニ検査スルトキハ其屬ニ於ケル如ク正シキ parenchyme 狀ヲナサズシテ細胞ハ *Chondrus*, つのまた屬、ノ如ク緩ク集リ、體ノ縱斷面ヲ見レバ直ニ其屬ノモノナルコトヲ知ル。皮層下ニ四分孢子群ヲ存スルコトハ *Chondrus* ニ外ナラザルヲ示ス。

予ガ曩ニ此植物ヲ房州ニ得タル如ク記シタルハ誤ニシテ此植物ハ金華山以南ニハ産セズ。

此研究ヲナスニ當リ予ハ別ニ何等信據スベキ標品等ヲ見ズ唯 Harvey ノ與ヘタル記載ト遠藤海産植物學ノ圖トヨリ此種ナリト斷定シタルナリ。

第 261 圖版. 1: *Chondrus pinnulatus* (Harv.) Okam., ひらことち, ノ實ナキ體, 沙流太産, 自然大. —2: 囊果ヲ有スルモノノ一部, 釧路産, 自然大. —3: 囊果ヲ有スルモノ, 室蘭産, 自然大. —4: 四分孢子群ヲ有スルモノ, 厚田産, 自然大. —5: 四分孢子群, 少シク廓大. —6: 囊果, 少シク廓大.

第 263 圖版, 1-6 圖. 1: *Chondrus pinnulatus* (Harv.) Okam., ひらことち, ノ體ノ縱斷面,  $\frac{20}{1}$ . —2: 横斷面,  $\frac{20}{1}$ . —3: 囊果ノ横斷面,  $\frac{25}{1}$ . —4: 仁ノ一部,  $\frac{20}{1}$ . —5: 四分孢子ヲ有スル枝ノ横斷面,  $\frac{21}{1}$ . —6: 四分孢子,  $\frac{200}{1}$ .

### *Chondrus armatus* (Harv.) Okam.

とげつのみまた 岡村稱

第 262 圖版; 第 263 圖版, 7-12 圖.

體ハ叢生シ、多少廣キ線狀ニシテ、扁壓或ハ稍圓ミアル扁壓ニシテ又狀ニ分岐シ、稀ニ一條ノ多少貫通セル莖ヲ有シ、其上部ハ又狀ニ分岐ス、通常甚ダ密ニ且ツ不規則ニ又狀ニ分岐シ又羽狀ヲナスモノアリ。枝ハ廣開シ或ハ甚シク廣ク開キテ分岐シ、大抵枝端ノ方ニ又狀ニ分岐シテ尖リタル頂端ヲ以テ終ル。枝ハ澤山ノ短キ稍圓柱狀ノ如キ小枝ヲ枝ノ兩縁ヨリ出シ其基部ハ細カラズ。先端尖銳ナリ、其短キモノハ刺狀ヲナシ、伸ビタルモノハ絲狀ニシテ、單條又ハ不規則ニ又狀ヲナス。此等刺狀枝ガ枝ノ表面ヨリ出ルコトハ極メテ稀ナリ。體ハ高サ 10-20 cm. ニシテ主枝ノ幅ハ 3-4 mm. ヲ有シ漸次上方ニ細シ、枝ノ縁邊ヨリ出ル小枝ノ長サハ 10-20 mm. ニシテ其中或モノハ常態ノ枝トナリテ伸長ス。四分孢子群ハ小サキ點狀ニシテ長楕圓形乃至卵形ヲナシ、密集シ、稍低キ疣ノ如キ觀ヲ呈ス。囊果ハ卵形又ハ楕圓形ノ點々ヲナシ枝及小枝ニ散在シ、少シク隆起ス。色ハ暗紫褐色ニシテ黃色トナル。質ハ軟骨質ニシテ體ハ乾燥スルトキハ紙ニ附音セズ。

產地: エカミ(北見國, 遠藤), 鬼脇, 利尻(遠藤), 増毛, 岩内, 小樽高島, 室蘭, 陸奥野邊地(遠藤), 秋田縣雄島, 志津川, 及船越(宮城縣), De Toni Syll. Alg., IV, p. 316 ニ擧ゲタル產地ハ函館ノ外皆誤ナリ。Gepp Chinese Mar. Algae, p. 163 ニ威海衛ヨリ得タリトシタルモノハ更ニ研究ヲ要ス。

前圖版ニ示シタル種, *Chondrus pinnulatus* Okam., ノ條下ニ云ヘル如ク、其植物ノ副枝ガ稍圓柱狀ニシテ尖レルトキハ、往々本種ノ如ク見ヘ彼ト是トヲ區別スルコト往々ニシテ容易ナラザルモノアリ。本種ハ北海道西岸ナル日本海ニ多ク其東南岸ニ産出スルコトナシ。山田氏ハ Trinity College ニ在ル Harvey ノ命名セル原標本ヲ調査シ其囊果ト體ノ構造トヲ研究シタル所ヨリ Harvey ノ *Cystoclonium armatum* ハ本種ニ外ナラズト語ラレタリ。

第262圖版. 1: *Chondrus armatus* (Harv.) Okam., とげつのみた, ノ實ナキ體, 岩内産 自然大. —2: 室蘭産ノ實ナキ體, 自然大. —3: 囊果ヲ有スル體ノ一部,  $\frac{7}{16}$ . —4: 四分胞子囊ヲ有スル體ノ一部,  $\frac{7}{16}$ .

第263圖版, 7-12圖. 7: *Chondrus armatus* (Harv.) Okam., とげつのみた, ノ體ノ縱斷面, 廓大. —8: 横斷面, 廓大. —9: 囊果ヲ有スル枝ノ一部, 少シク廓大. —10: 同上ノ横斷面,  $\frac{40}{16}$ . —11: 四分胞子囊群ヲ有スル枝ノ横斷面,  $\frac{11}{16}$ . —12: 四分胞子,  $\frac{240}{16}$ .

### *Herposiphonia tenella* (C. Ag.) Naegeli<sup>1)</sup>

くものすひめごけ 岡村稱

第264圖版, 1-9圖

體ハ蜘蛛網ノ如ク細クシテ他ノ海藻上ニ錯綜ス. 體ハ匍匐スル主枝ヲ有シ其頂端ハ上方ニ且内方ニ屈曲シ, 其曲リタル外側ヲ附着物ノ方ニ向ク. 頂細胞ヨリ次々ノ關節細胞ヲ分裂シ, 幼キ枝又ハ小枝ハ一列ノ細胞トナテリ形成セラレ後中心細胞及周心細胞ヲ形成ス. 主枝ノ周心細胞ノ前端ヨリ長キ單條ノ絲狀根ヲ其腹面(即チ下面)ヨリ出ス. 根ハ概ネ其頂端ニ盤ヲナサザレドモ, 時トシテ不規則ニ形成セラレタルモノヲ有スルコトアリ. 主枝ノ背面(即チ上面)ヨリ二種ノ枝ヲ出ス, 其一ハ主枝ト同ジク成長ヲ繼續シ得ベキモノ即チ長條枝ニシテ他ノ一ハ成長ニ限アルモノ即チ短條枝ナリ. 長條枝ハ主枝ノ兩側ニ互生シ, 各節ヨリ一個ヲ出シ其配置ハ, 模範的ノモノニテハ, 常ニ二條ノ長條枝ノ出ル關節ノ間ニ3個ノ關節ヲ存ス. 此等ノ各關節ノ上部(背側)ヨリ短條枝ヲ2列ニ互生ス; 其配置ハ, 一條ノ長條枝ノ出タル後短條枝ハ之ト反對ノ側ヨリ出ヅルモノトス; 一例ヲ示セバ, 若シ此長條枝ガ主枝ノ右側ニ在リトスレバ(4圖ヲ見ヨ)次ノ短條枝ハ其左側ニ出デ, 其次ノモノハ右側ニ出デ第三ノモノハ又左側ヨリシ, 之

1) *Herposiphonia Naegeli*, ひめごけ屬, ノ性質ハ日本海藻圖説第一卷13頁ニ在リ.

ニ次デ左側ニ一ノ長條枝ヲ出スコト前ノ如ク以下之ニ準ズ.

初メ幼キ短條枝ハ幼キ長條枝ヨリ遙ニ伸長シ主枝ノ内方ニ屈曲セル頂端ノ方ニ屈曲シテ之ヲ蔽ヒ且ツ被包スル如ク成レリ. 短條枝ハ單條ニシテ分枝スルコトナシ, 其基部ノ關節ハ少數(通常5個, 3圖)ナレドモ, 其上方ニ進ム從テ周心細胞ノ數ハ次々ノ關節ヲ増シ, 遂ニ主枝ニ於ケルト同數トナル, 即チ概ネ8個トス, 體ハ各部皮層細胞ヲ被ムルコトナシ. 各短條枝ノ關節ノ數ハ11-14ニ變ズ. 主枝ノ直徑ハ50-70 $\mu$ ニシテ短條ノモノハ50 $\mu$ アリ而シテ關節ノ長サハ其直徑ニ稍等ク或ハ其一倍半程長シ. 今予ノ標本ニテハ模範的毛狀葉ヲ缺クト雖モ7圖ニ其後生的ニ形成セラレタルモノヲ見ル.

四分胞子囊ハ短條枝ノ各關節ニ一個ヅク, 一縱列ニ形成セラレ, 4-7若クハ7個以上ヲ有ス. 囊果ハ之ヲ知ラズ. 紅色ニシテ軟カナリ.

産地: 潮線間ノ他ノ海藻ニ錯綜ス. 琉球, 伊豫柏崎(緒方氏), 小笠原島, 宇品(大島氏), 越中虻島(御旅屋氏).

分布: 地中海, Morocco, 西印度, Bermuda.

時ニ短條ト長條トノ配置ノ不規則ナルモノアリ; 例ヘバ第2圖ニ見ル如ク圖ノ左側ニ於テ主枝ト同一ノ側ニ在ル2條ノ長條枝ノ間ニ6個ノ關節アリテ, 此體ニテハ此等2條ノ長條枝ノ間ニ於テ其右側ヨリ出ヅル管ナル1條ノ長條枝ヲ有スベキ關節ハ發育セズシテ止ミタルモノトス. 加之, 或場合ニハ數個ノ關節ハ短條枝ヲ有セザルモノアリテ恰モ *H. secunda* ノ如キ配置ヲ想ハシムルモノアリ(本種ハ規則トシテ各關節ヨリ必ズ短條又ハ長條枝ヲ有スベク, *H. secunda* ハ所々之ヲ缺クモノトセラレタリ; 此故ニ Børgesen ハ *H. secunda* ヲ *H. tenella* ノ變種ナラズヤト其 *Mar. Alg. of Dan. W. Ind.*, p. 289, ニ論ゼリ).

第264圖版, 1-9圖. 1: *Herposiphonia tenella* (C. Ag.) Naeg., くものすひめごけ, ノ體,  $\frac{1}{16}$ . —2: 枝及小枝ノ配置ノ不規則ナル主枝,  $\frac{100}{16}$ . —3: 2圖ノ體ノ頂端ニ近キ一部分ヲ廓大シタルモノ; *a, b*, 2圖ノ *a, b*, ニ相當ス,  $\frac{240}{16}$ . —4: 枝及小枝ノ模範的配置ヲ有スル主枝,  $\frac{48}{16}$ . —5: 體ノ横斷面,  $\frac{240}{16}$ . —6: 體ノ成長端,  $\frac{600}{16}$ . —7: 後生的毛狀葉,  $\frac{500}{16}$ . —8: 絲狀根,  $\frac{100}{16}$ . —9: 四分胞子囊ヲ有スル短條枝,  $\frac{47}{16}$ .

**Herposiphonia insidiosa (Grev.) Fkbg.**

かぎひめごけ 岡村稱

第264圖版, 10-16圖

體ハ纖細ナル絲狀體ニシテ他ノ海藻上ニ緩ク錯綜セル塊ヲナシ、匍匐セル主枝ヲ有シ、其頂端ハ上方ニ且内方ニ屈曲シ、其屈曲セル外側ヲ附着物ノ方ニ向ク、主枝ノ背面即チ上面ヨリ上方ニ短條枝及長條枝ヲ出ス。短條枝ハ各關節ヨリ互生シ、其處此處ヨリ長條枝ヲ別ニ一定ノ規則ナク發出ス。短條枝ハ互ニ相向キ合ヒテ對立シ、長短二様ノ枝ハ其上部ニ於テ螺旋ノ如ク強ク卷キタリ。體ハ甚ダシク分枝スルヲ以テ植物ハ密ニ纏綿セル小塊ヲナス。短條枝ハ單條ニシテ其長キモノニ於テ3mm. ノ長サアリ。短條枝ノ關節ノ數ハ25-26ニシテ9-12個ノ周心細胞ヲ有シ、之ヲ表面ヨリ見ル時ハ5-6個ヲ露シ、體ハ全部皮層ヲ存スルコトナシ。主枝ノ太サニ就テハ予ハ一ノモノニ於テ直徑138 $\mu$ ヲ計リ短條枝ニテ90 $\mu$ アルヲ見タリ。體ハ短キ絲狀根ヲ以テ他物ニ密着シ、根ハ主枝ノ背面ノ關節ノ中央部ヨリ出ヅ。四分胞子囊ハ短條枝ニ形成セラレ、11-12又ハ夫以上一縱列ヲナス。色ハ暗紫色。質ハ軟クシテ乾燥スルトキハ紙ニ密着ス。

產地：潮線間ナル他海藻ニ纏絡ス；相州江ノ島。

分布：東印度, Ceylon.

第264圖版, 10-16圖. 10: *Herposiphonia insidiosa* (Grev.) Fkbg. ノ體, 自然大.—11: 體ノ一部; a, 側面ヨリ觀タルモノ; b, 背面即チ上面ヨリ見タルモノ; 圖ヲ簡單ニスル爲メ二三ノ長條枝ヲ除去セリ, <sup>43</sup>/<sub>1</sub>.—12及16圖: 主枝ノ一部, <sup>43</sup>/<sub>1</sub>.—13: 四分胞子囊ヲ有スル短條枝, <sup>500</sup>/<sub>1</sub>.—14: 體ノ橫斷面, <sup>280</sup>/<sub>1</sub>.—15: 四分胞子囊ヲ有スル枝ノ橫斷面; b, 胞子ノ基部細胞; d, d, 蓋細胞, <sup>300</sup>/<sub>1</sub>.

**Taenioma J. Ag. 1863. ひめづた屬.**

DELESSERIACEAE このほのり科

體ハ纖細ナル絲狀ニシテ圓柱狀ノ匍匐莖ヲ以テ、匍匐シ、其下面ヨリ絲狀根ヲ出シ、其上面ヨリ枝ヲ直上ス；直上セル枝ハ數回分岐ス（分岐ハ叉狀ト稱セラレ、モ稍互生様ナリ）。枝ハ各有限成長ヲ爲セル扁平ナル細キ band 狀ヲナシ、薄キ葉狀ニシテ明ニ中肋ヲ存シ極メテ正シキ細胞ノ配置ヲ呈シ、一條ノ中肋ノ周圍ニ4條ノ同長ナル周心細胞ヲ存ス；頂細胞ハ横ニ關節ス。四分胞子ハ扁平ナル枝ノ中肋ノ兩側ニ形成セラレテ2列ニ並ビ一層ノ面ヲナシテ存ス。精子群ハ小サキ精子細胞ノ大ナル又ハ小ナル群ヲナシテ中肋ト縁邊部トノ間ノ扁平ナル葉ノ兩面ニ形成セラル。囊果ハ詳ナラズ。

暖海ニ産シ、1-2種アリ。下ニ記スモノハ模範種ナリ。

**Taenioma perpusillum J. Ag.**

ひめづた 岡村稱

第264圖版, 17-19圖; 第265圖版, 5-9圖。

體ハ極メテ纖細ナル軟キ絲狀體ノ低キ斑ヲナシ、匍匐スル主枝ハ無限成長ヲナシ夫ヨリ直立スル枝ヲ出ス。主枝ハ圓柱狀ニシテ其橫斷面ハ4條ノ周心細胞ヲ有シ、表面ヨリ見ルトキハ3個ノ細胞アリ。其腹面即チ下面ヨリ絲狀根ヲ出ス；絲狀根ハ往々長キ單條ノ柄ヲ有シ其末端ニ小サキ圓盤狀附着器ヲ着ク。主枝ノ背面即チ上面ヨリ有限成長ヲナセル多少分岐セル枝ヲ有ス。此等有限成長ヲナス枝ノ中或ハ無限ニ成長シテ普通ノ枝トナルモノアリ。枝ハ概ネ4-6又ハ夫以上ノ關節ヲ距テ、出ヅ。匍匐スル主枝ノ背面ヨリ立ツ枝ノ主軸ハ匍匐スル主枝ノ如ク圓柱狀ニシテ、其枝ハ有限ノ成長ヲナス3-4ノ小枝ヲ存ス。小枝ハ扁平ニシテ其下部ノ關節ハ圓柱狀ナレドモ夫ヨリ上ノ方へ次々ノ關節ハ扁タキ部



分ノ兩側ニ在ル周心細胞ヨリ2個ノ細胞ヲ分裂シ、一個ハ上ニ一個ハ下ニ在リ、此他細胞ノ分裂スルコトナシ。扁平ナル小枝ノ幼キ頂端ハ長キ圓柱狀ノ一列ニ連ナレル細胞ヨリ成レル絲ヲ存ス(絲ハ通常2條ナレドモ、時トシテハ8圖ニ見ル如ク、未ダ分裂モザル頂細胞、[圖ノ右側ノモノ]、ヨリ2條ヲ出シテ3條アリ); 此等ノ絲ノ基部ノ細胞ハ分裂シテ毛ノ基部成長ヲナスベキ分裂細胞トナリ、其充分成長スルトキハ2條ノ長キ無色ノ毛ヲ以テ扁キ小枝ヲ冠スルニ至ル。色ハ鮮紅色ナリ。質ハ柔クシテ乾燥スルトキハ紙ニ密着ス。

產地：潮線間ノ海藻上ニ在リ。小笠原島、伊豫柏崎(緒方氏)、房州高ノ島。

分布：太平洋、西印度、喜望峰、Morocco、地中海、Tongatabu。弘ク暖海ニ産ス。

第264圖版、17-19圖。17: *Taenioma perpusillum* J. Ag. ノ體、自然大。—18: 體ノ一部、 $\frac{4}{1}$ 。—19: 主枝ノ上面ヨリ立チタル枝ノ輪廓、 $\frac{28}{1}$ 。

第265圖版、5-9圖。5: 絲狀根、 $\frac{245}{1}$ 。—6: 扁平ナル枝ノ表面、 $\frac{245}{1}$ 。—7: 6圖ノ枝ノ上部ノ横断面、 $\frac{245}{1}$ 。—8: 枝ノ成長點、 $\frac{500}{1}$ 。—9: 枝ノ頂端、 $\frac{240}{1}$ 。

### *Scinaia moniliformis* J. Ag.

じゆすふさのり 岡村稱

第265圖版、1-4圖。

體ハ6-12 cm. 高ク、9-11回又狀ニ分岐シ、短莖ヲ有シ、地峽ノ如ク強ク縊レタリ；節間部ハ長楕圓形又ハ楔形-長楕圓形ニシテ(短キ體ノモノニテハ倒卵形ナルコトアリ)、幅3-4 mm. (乾燥標品ニテ)、長サ5-15 mm. ニシテ球狀ヲナスコトナク、薄膜ナリ。大形ノモノニテハ節間部ハ長ケレドモ(10-15 mm)、小形ノモノハ短ク、其長サ3-4 mm. アリ。無色ナル上皮細胞ハ幅濶キ四角形ニシテ、扁キ表面ヲ有シ、之ヲ上ヨリ見ルトキハ5-6角形ヲ呈ス。皮下層ハ緩ク配置セル球狀細胞ノ一列ヨリ成ル。中心部ノ絲組織ハ乾燥標品ニテハ細キ中軸ノ如ク

1) *Scinaia Biv.*, ふさのり屬ノ性質ハ第一卷、第一集、11頁ニ在リ。

觀ユ。囊果ハ體ノ中央ノ節間部ニ緩ク散在シ、稍球狀ヲナス。色ハ美シキ紫紅色。質ハ軟クシテ乾燥スルトキハ密ニ紙ニ附着ス。

產地：土佐沖ノ島(末廣氏)、八丈島。

分布：濠洲 Port Phillip。

短キ關節ヲ有スルモノハ往々 *Scinaia hormoides* Setch. ノ如キ觀アリト雖モ該植物ハ球狀又ハ洋梨果狀ノ關節ヲ有スレドモ本種ハ細長キ關節ヲ有シテ決シテ球狀又ハ洋梨果狀ヲナサズ、或ハ稀ニハ斯ノ如キ形セルモノアリトスルモ、其ハ決シテ一般ナラズトス。

第265圖版、1-4圖。1: *Scinaia moniliformis* J. Ag., じゆすふさのり、ノ囊果ヲ有スル體、 $\frac{1}{1}$ 。—2: 短キ節間部ヲ有スル體、自然大。—3: 上皮細胞ヲ上ヨリ見タルモノ、 $\frac{500}{1}$ 。—4: 上皮ノ横断面、 $\frac{100}{1}$ 。

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