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BY

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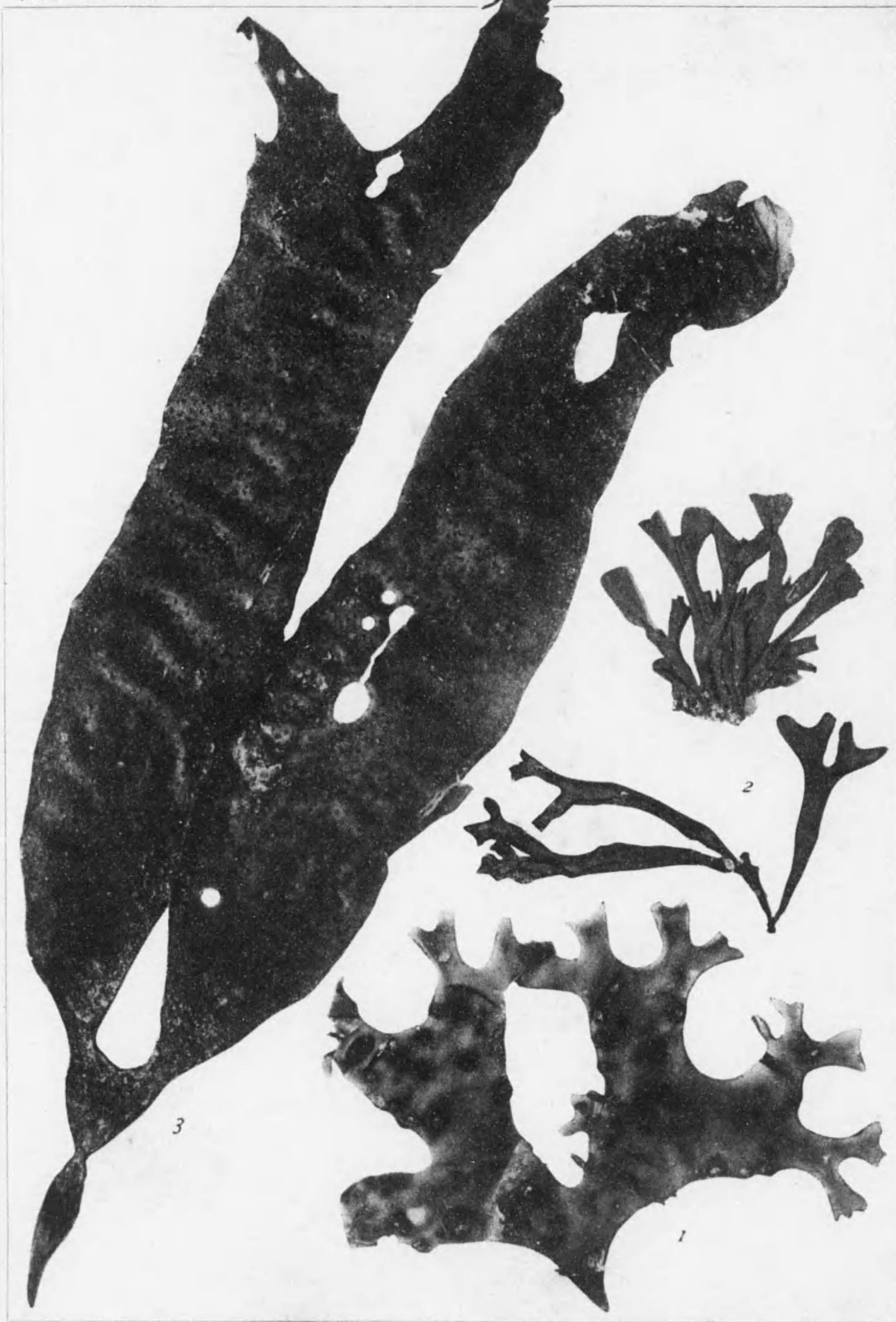
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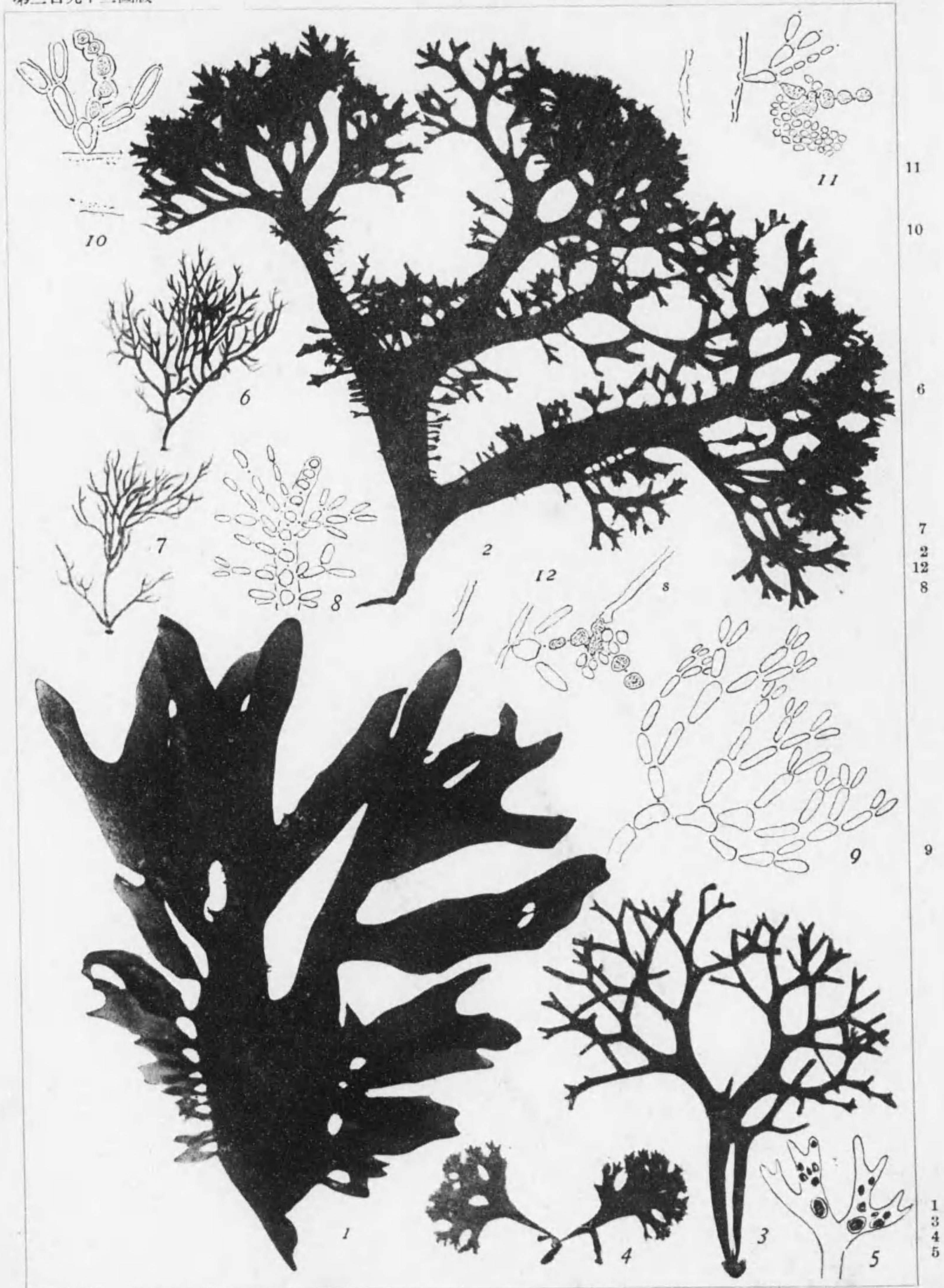
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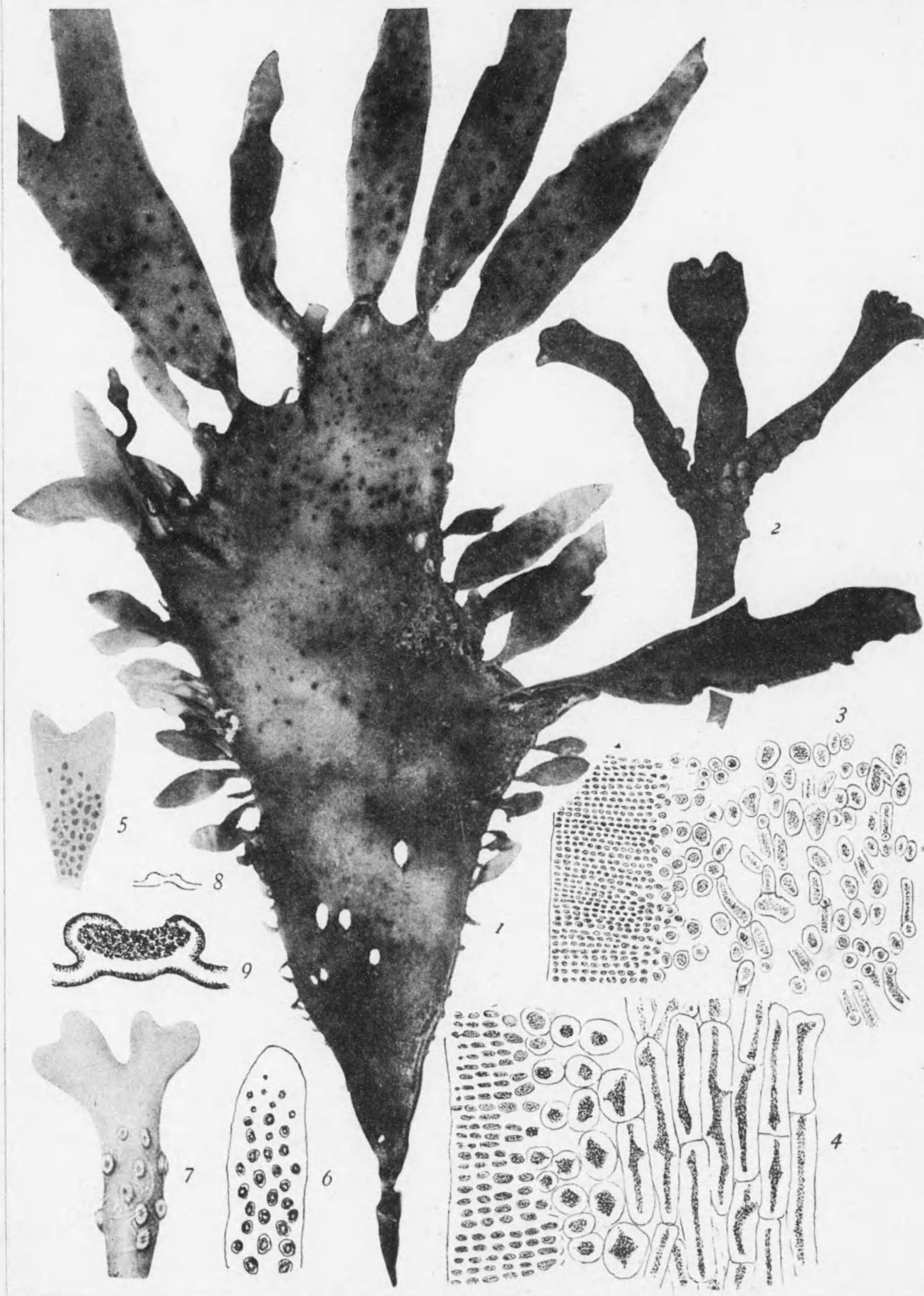


Chondrus ocellatus Holmes f. *typicus*, f. *canaliculatus*, f. *giganteus*. つのまた各型.



Chondrus ocellatus Holm. f. *typicus*, f. *crispus*. つのまた各型. Fig. 1-5.
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Chondrus ocellatus Holm. f. canaliculatus, f. giganteus. つのまた各型.

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— 83 —

Chondrus ocellatus Holmes.
 Nom. Japon.: *Tsunomata*.
 PL. CCXCI—CCXCIII.

Holmes New Mar. Alg. Japan, p. 252, pl. IX, f. 2; Okam. Nippon Surui Mei-i (2nd. Ed.) p. 29; *Ch. ocell. var.?* Okam. *l. c.*; *Ch. crispus* (non Stackh.) Okam. *l. c.*; Narita Not. ad Alg. Japon. p. 326 (Journ. of Bot. 1914); *Chondrus giganteus* Yendo Nov. Alg. Japon., p. 4 (Bot. Mag. Tokyo, Vol XXXIV, 1920). *Ch. sp. nov.* Yendo in Narita *l. c.* p. 327.

Diagn. Fronds leathery or cartilaginous, more or less channelled below, simple or sparingly forked or many times flabellato-dichotomous, with widely parted segments on broad axils, with lower portions undivided for a long distance and then closely forked above, or soon parted from the base in an equal distance upward, blunt or bifid toward apex, with or without marginal proliferations; margin entire, more or less slightly thickened, with shorter or longer ligulate or bifid proliferations; *tetrasporangia* forming roundish or oval dot-like sori densely scattered over the surfaces; *cystocarp*s elliptical, more or less prominent on one side and concaved on the other, ocellated. Plant very variable in the size and form of frond.

Hab.: On rocks extending from the high tide to below low tide; common along the Pacific coast and the Japan Sea, ranging from Kyusyu to Muroran along the Pacific coast and from the southern provinces as far north as Mashiké, Hokkaido, along the coast of the Japan Sea; east and west coasts of Chosen.

Descr.: Root a small callous disc. Fronds a few caespitose or gregarious, leathery, or cartilaginous, subcylindrical at very base, soon compressed and expanded to more or less channelled, flat, linear, linear-cuneate, simple, once or twice forked, or 5-7 times repeatedly dichotomous segments. In some, lower portion of the frond rising for more than half the



height undivided, while in the other soon parted. In some, the lower portion expanding into a cuneate segment and then closely and repeatedly forked, in others equally broad from the base and forked in equal distance; segments patent with broadly roundish axils, ending in ligulate, obtuse, bifid or emarginated apices. Margin entire, a little thickened, either free from or furnished with simple or 2-3 times forked, shorter or longer, cuneate or ligulate proliferations, ending in bifid or blunt apices, in robust forms proliferating even from surfaces. Breadth of the frond varying from 0.5 to 6 cm or even to 8 or more, and the length from 8 to 20 cm., in some even to 50 cm. In extreme cases, only 1.5-2 mm broad and 2-3 cm high, and yet fertile; but 10-15 by 1-3 cm is more usual. *Tetrasporangial sori* densely scattered over the upper portions of frond forming dot like, elliptical or irregularly roundish spots, about one mm in size. *Cystocarps* roundish elliptical, prominent on one side and concave on the other, ocellate by presenting a translucent space around the nucleus when the frond is held between the eyes and the light; they vary in size from 1.5 to 6 mm in the longer axis and elevated in robust ones to even more than 1.5 mm. *Colour* purplish red, paler at the summit, often becoming greenish. *Substance* thick leathery or cartilaginous, being tough and flexible.

The plant is very variable in the form and size of frond according to habitat as in the European relatives. The following forms may, in some measures, be distinguished:

f. canaliculatus n. f. Short, simple, or once or twice forked, linear-cuneate, canaliculated fronds, 4-10 mm by 5-10 cm.

This form is usual along the Pacific side of the country and not known in the Japan Sea; growing on the rocks at high tide, where the plant is exposed to dashing waves.

f. typicus n. f. Flat, more or less broader fronds, with 3-4 times, patently dichotomous, linear or cuneate segments, with or without marginal proliferations, 10-17 cm high, 1-5 cm broad.

This form is very common along the Pacific coast and occasionally found

in the Japan Sea side of the Main Island. It has a tendency to become broader in the protected and calmer places, especially in the districts where fresh water pours in. It grows on the rocks extending from between tide marks to below low tide.

f. giganteus n. f. Syn: *Chondrus giganteus* Yendo l. c., *Ch. sp. nov.* Yendo in Narita l. c.

Fronde high having wider and elongated segments, sparingly dichotomous in a very remote intervals.

This form is only local being found in the coast extending from Prov. Bosyu to Prov. Hitachi, especially in the neighbourhood of River Nakagawa and R. Tonegawa.

f. crispus n. f. Syn: *Ch. crispus* (non Stackh.) Narita l. c.

Repeatedly and closely 5-7 times dichotomous in a flabellate manner, often profusely furnished with slender lateral proliferations.

This form is very common along the coast of the Japan Sea, coast of Chosen and less so in the Pacific side; growing in the Japan Sea below low tide, where the tidal difference is very few, and in the Pacific coast between tide marks.

PL. CCXCI. Fig. 1: Cystocarpic frond of *Chondrus ocellatus* Holms *f. typicus* Okam., $\frac{1}{1}$.—Fig. 2: Sterile fronds of *f. canaliculatus* Okam., $\frac{1}{1}$.—Fig. 3: Tetrasporic frond of *f. giganteus* Okam., $\frac{1}{1}$.

PL. CCXCII, fig. 1-5. Fig. 1: Tetrasporic frond of *f. typicus* Okam., $\frac{1}{1}$.—Fig. 2: Cystocarpic frond of *f. crispus* Okam., $\frac{1}{1}$.—Fig. 3 and 5: Cystocarpic frond of *f. crispus*, $\frac{1}{1}$.—Fig. 4: Sterile frond of *f. crispus*, $\frac{1}{1}$.

PL. CCXCIII. Fig. 1: Cystocarpic frond of *f. giganteus* Okam., $\frac{1}{1}$.—Fig. 2: Frond of *f. canaliculatus*, having wart like prominent cystocarps, $\frac{1}{1}$.—Fig. 3: cross section of frond, $\frac{245}{1}$.—Fig. 4: Longitudinal section of frond, $\frac{500}{1}$.—Fig. 5: apical portion of frond bearing tetrasporic sori, re-immersed in water, $\frac{1}{1}$.—Fig. 6: Apical portion of frond bearing cystocarps, $\frac{1}{1}$.—Fig. 7: Portion of fig. 2, restored in the water, $\frac{1}{1}$.—Fig. 8-9: Vertical section of one of the cystocarps of fig. 7; size of the cystocarp 4 by

3 mm, and 1.5 mm. high; 8:1/1; 9:7/1.

Dudresnaya minima Sp. nov.

Nom. Japon.: *Hime-hibirôdo*.

PL. CCXCII, fig. 6-12.

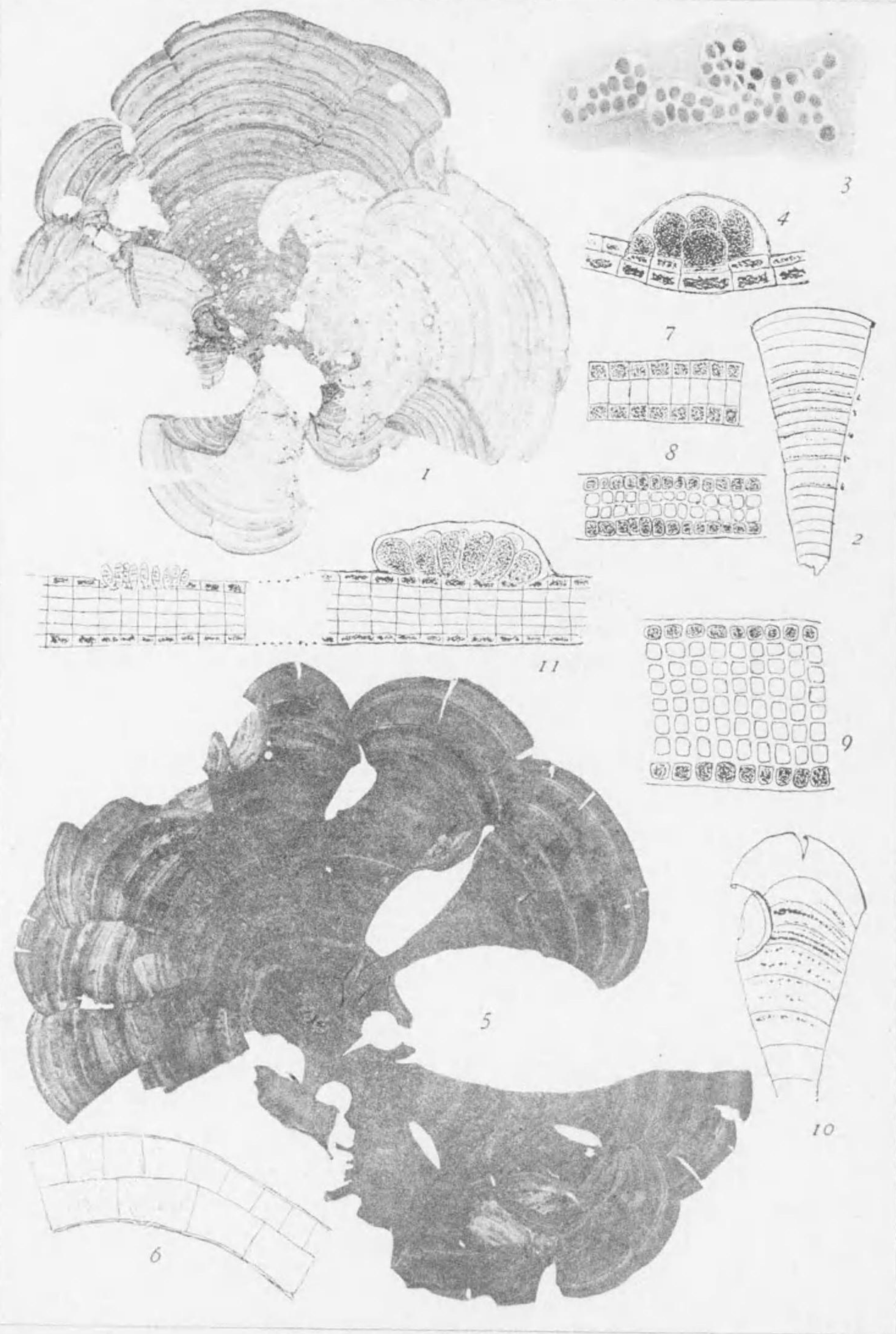
Diagn.: Frond erect, small, almost filiform, lower portion subnaked, densely branching upward in patent and irregularly dichotomo-alternate manner in an inverted triangular outline; auxiliary cell intercalary.

Hab.: Ondo-no-seto, and Prov. Iyo.

Descr.: Frond erect, small, slender and cylindrical, almost filiform, very soft and gelatinous, 3-4 cm high, scarcely one mm. thick, leaving the lower portion naked like stem for more or less long distance (2-10 mm), thence upward more and more densely branching in patent and irregularly dichotomo-alternate manner, with ultimate minute pointed branchlets, making an obovate or inverted triangular outline. Auxiliary cell intercalary, being formed from the second or third articulation counting from the lowest one of the row of an auxiliary cell-branch, which consists of 5-6 articulations. The terminal growing portion of frond consisted of a single row of articulated cells, from each of which branches consisting of di-trichotomous row of cells arise verticillately to form peripheral filaments. The cells of the peripheral filaments 2-3 times long as diameter. Colour light purple. Plant firmly adhering to paper in drying.

The smallest plant among hitherto-known related species.

PL. CCXCII, fig. 6-12. Fig. 6-7: Fronds of *Dudresnaya minima* sp. nov., 1/1.—Fig. 8: Growing apical portion of the frond, 500/1.—Fig. 9: Peripheral filament, 500/1.—Fig. 10: Auxiliary cell-branch, 45/1.—Fig. 11: Gonimoblast formed from an auxiliary cell, 245/1.—Fig. 12: Auxiliary cell fused with a sporogene filament, s, 245/1.



Padina japonica Yam. おきなうちわ. Fig. 1-4.
 Padina crassa Yam. こならみうちわ. Fig. 5-11.

Padina japonica Yamada.

Nom. Japon.: *Okina-uchiwa*.

PL. CCXCIV, fig. 1-4.

Yamada Notes on Some Japan. Alg. II. p. 67 and 69, PL. XIX, f. 2 (Journ. Facult. Sc. Hokkaido Imp. Univ., Ser. V, Vol. I, n. 2, 1931.)

Frond 3-6 cm. high, thin (about 100 μ thick), flabelliform, shortly stipitate, stupose at the base, often split into several segments; segments entire at margin, sometimes shallowly split; hair lines conspicuous, interpilar spaces usually rather narrow (2 mm apart); consisting of two layers of cells through the whole body with a little larger cells on the lower side; *sori* of *tetrasporangia* produced on the upper side of every other hair line on the upper surface making a continuous line, but sometimes additional, discontinuous, rather irregular lines produced along the lower side of the ordinary sori, making incomplete double lines, provided with a well marked inducium. Frond moderately calcified on the lower surface. *Colour* light yellowish brown with olivaceous shade. *Substance* thin and the plant does not adhere to paper in drying.

Hab.: Provs. Satsuma, Higo, Nagato, Iyo, Mikawa, Shima, Echigo.

PL. CCXCIV, fig. 1-4. Fig. 1: Frond of *Padina japonica* Yamada, $\frac{1}{1}$.—Fig. 2: Semi-diagrammatic view of the surface of fructified portion; 1-6, showing the hair lines; $\frac{1}{1}$.—Fig. 3: Sori viewed from above, $\frac{48}{1}$.—Fig. 4: Radial longitudinal section of frond through a sorus, $\frac{48}{1}$.

Padina crassa Yamada.

Nom. Japon.: *Kona-umi-uchiwa*.

PL. CCXCIV, fig. 5-11.

Yamada *l. c.*, p. 67, PL. XVII, f. 2.

Frond 8-10 cm. high, with a short (about 1 cm long), but broad and thickish stem, flabelliform, thickly stupose at the base, often divided into

many similar shaped segments, composed of 6-8 layers of cells near the base, of 4-2 toward the margin, 200-300 μ thick; segments flabellate, membranaceous, entire at margin, encrusted slightly with chalk mostly on the under surface; interpilar zones rather wide (5-6 mm apart). *Tetrasporangial sori* in every interpilar zone, forming a more or less broken concentric line, sometimes forming two lines, or sometimes distributed irregularly between two hair lines, provided with an inducium. *Colour* between rusty and buffy tinges, resembling that of *Padina Commersonii*. Plant imperfectly adhering to paper in drying.

Hab.: Provs. Chikuzen, Hizen, Nagato, Iyo, Sagami, Mutsu, Izumo, Uzen.

PL. CCXCIV, fig. 5-11. Fig. 5: Fructified frond of *Padina crassa* Yamada viewed from the upper surface, with a few portions of the under surface bent upon, 1/1.—Fig. 6: Radial longitudinal section of younger part of frond, 200/1.—Fig. 7: cross section of frond near apex, 200 μ thick, 74/1.—Fig. 8: cross section of the middle portion of frond swollen by caustic potash, 100/1.—Fig. 9: cross section of the basal part, 300 μ thick, 100/1.—Fig. 10: Surface-view of frond showing sori, 1/1.—Fig. 11: Radial longitudinal section of sporangial sorus and paranemata, 74/1.

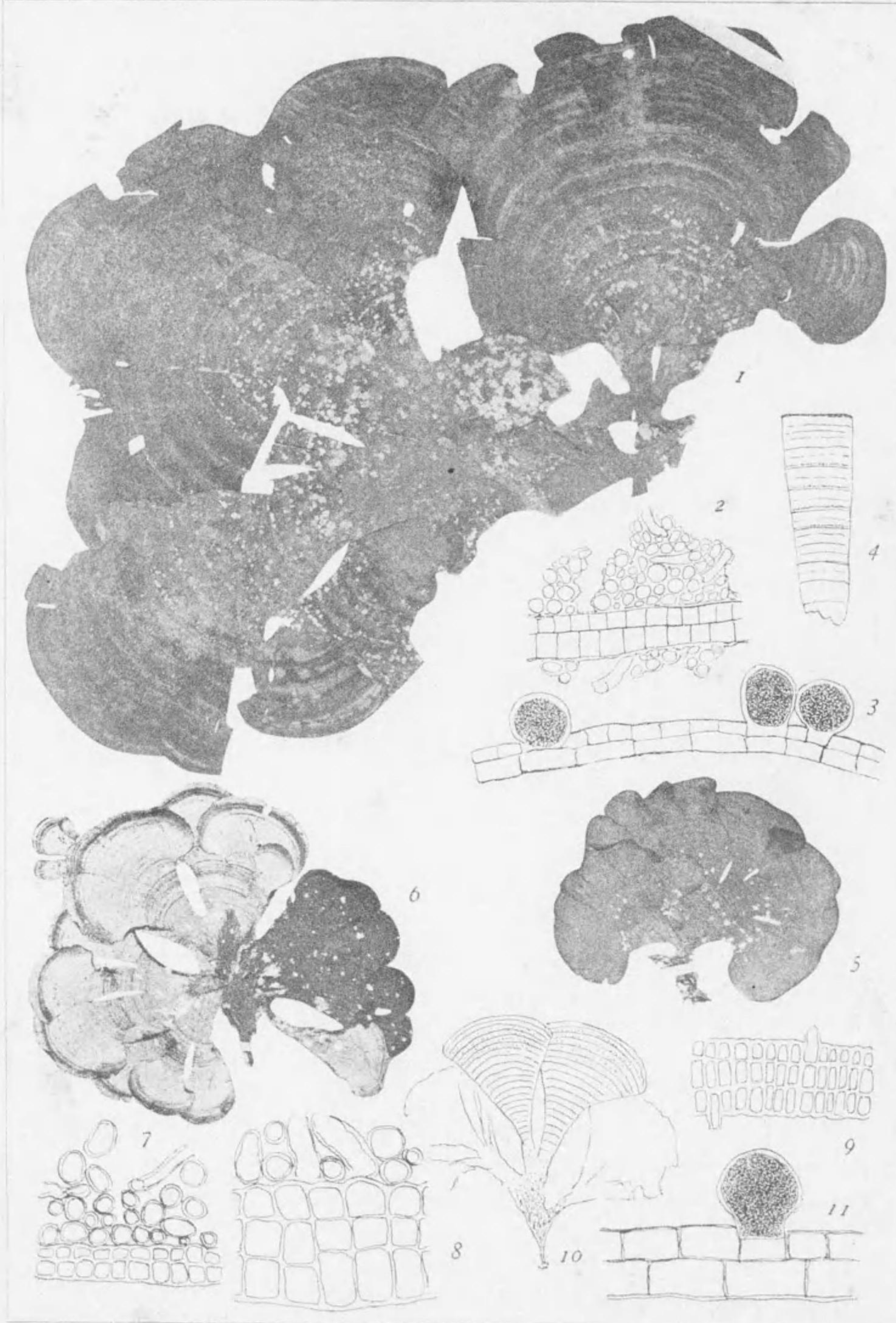
***Padina australis* Hauck.**

Nom. Japon.: *Usuba-umiuchiwa*.

PL. CCXCV, fig. 1-4.

Hauck, Von Hildebrandt gesm. Alg. p. 44, in Hedwigia Bd. XXVI, 1887; Web. v. Bos. Siboga, I, 1913, p. 179, fig. 52; Yamada *l. c.*, p. 70, Text fig. 2 and PL. XVIII.

Frond erect, 11-15 cm high, thin (50-90 μ thick), broadly flabelliform, often split into many flabellate segments and covered with brownish hairs up to about the middle part of the frond, with hair-lines moderately conspicuous (2-3 mm apart). Segments entire or usually split shallowly at the



Padina australis Hauck うちばらみうちわ Fig. 1-4.
Padina Commersonii Bory あかばらみうちわ Fig. 5-11.

margin. Frond consisting of two layers of cells through the whole body, with the cells of the upper layer slightly smaller than those of the lower. *Sporangial sori* disposed concentrically on every other interpilar zone, so that the fertile and sterile zones appearing in a regular alternation, without inducium. Lower surface very slightly encrusted with chalk. Colour light olivaceous yellowish brown. Substance very thin and translucent. Plant does not adhering to paper in drying.

Hab.: Taiwan, Ryukyu, Karatsu, Tosa.

PL. CCXCV, fig. 1-4. Fig. 1: Frond of *Padina australis* Hck., $1/1$.—Fig. 2: Cross section of the frond, $100/1$.—Fig. 3: radial longitudinal section showing tetrasporangia, 69μ thick, $100/1$.—Fig. 4: Surface view of fructified portion, $1\frac{1}{2}$.

***Padina Commersonii* Bory.**

Nom. Japon.: *Akaba-umiuchiwa*

PL. CCXCV, fig. 5-11.

Bory, Voy. Coquille, p. 144, pl. 21, f. 2; Web. v. Bos. Siboga, I, 1913, p. 178, fig. 51; Yamada Stud. Meeresalg. Ins. Formosa p. 251 (Bot. Mag., Tokyo XXXIX); 1925; Id. Notes on Some Japan. Alg. II, *l. c.* p. 68; Hauck *l. c.* p. 42; Boerg. Some Ind. Green and Brown Alg. of Presid. of Bombay p. 170. (Journ. Ind. Bot. Soc. IX, 1930).

Frond small, 4-6 cm high, thin membranaceous (about 140μ thick), flabelliform, with somewhat auricular lobes at both ends of entire frond, often split into many segments, shortly stipitate and hairy near the base, thinly calcified on the lower surface; segments entire at margin, sometimes shallowly split and rarely again proliferated with minute lobes from the upper margin, all the segments similar in shape like primary frond. Hair lines conspicuous; interpilar spaces usually very narrow, consisting of 2-3 layers of cells, of which those on the lower side larger than those of the upper. *Sori of tetrasporangia* making a continuous line on the upper side of every

interpilar zone on the upper surface of the upper portion, provided with no inducium. Colour between rusty and buffy tinges. Plant not adhering to paper in drying.

Hab.: Taiwan and Ryukyu.

PL. CCXCV, fig. 5-11. Fig. 5-6: Sterile frond of *Padina Comersonii* Bory, 1/1.—Fig. 7: Cross section of frond, 245/1.—Fig. 8: Cross section of frond showing 3 layers of cells; rhizoids much reduced, 100/1.—Fig. 9: Cross section of older frond, 138 μ thick, 100/1.—Fig. 10: portion of fructified frond, 1/1.—Fig. 11: radial longitudinal section of frond bearing a sporangium, 245/1.

Chondrus ocellatus Holmes.

つ の ま た

第 291-293 圖版

根ハ小サキ殻狀根ナリ。體ハ叢生シ或ハ簇生ス、革質又ハ軟骨質ニシテ、根際ノミ稍圓柱狀ヲナシ、上部直ニ扁壓シテ多少溝狀ニ反リ、扁平、線狀、又ハ細キ楔形ヲナシ、單條又ハ1-2回若クハ5-7回複又狀ニ分岐ス。或體ニテハ下部ハ中央以上分岐セザルモノアリ又或モノハ下部ヨリ直ニ分岐ス。或體ニテハ下部ハ楔形ニ擴ガリテ夫ヨリ密ニ數回分岐シ、他ノモノニテハ下部ヨリ殆ド同様ノ幅ニテ同一ノ距離ヲ距テ、分岐ス；各部ハ廣キ圓キ腋ヲ以テ廣開シ、頂端舌狀、鈍圓、二裂又ハ淺ク凹ミタル先端トナル。縁邊ハ全縁ニシテ少シク厚ク、全ク副枝ヲ出サハルカ或ハ單條又ハ2-3回分岐セル、長キ又ハ短キ、楔形又ハ舌狀ノ副枝ヲ出シ、其頂端二裂シ又ハ鈍頭トナル、旺盛ナルモノニテハ表面ヨリ副枝ヲ出スモノアリ；幅ハ0.5-6cm廣ク8cm又ハ夫以上ノモノアリ、長サハ8-20cm或ハ50cm以上ニ及ブモノアリ；極端ナル場合ニハ幅僅ニ1.5-2mm高サ2-3cmニシテ然モ實ヲ熟スルモノアリ；然レドモ、長サ10-15cm幅1-3cm程ノモノヲ普通トス。四分胞子囊ハ約1mm、ノ大サヲ有シ不規則ニ橢圓形ヲナセル群ヲナシ體ノ上部ヨリ中央程迄點狀ヲナシテ密ニ散在ス。囊果ハ圓キ橢圓形ニシテ一方ノ側ニ隆起シ其反對ノ側ハ凹ミ、仁ノ周圍ニ半透明ノ環ノ如キ縁ヲ取レル如クナリテ宛モ眼球ヲ見ルガ如シ；其長軸1.5-6mm。アリ、著シク隆起セルモノニテハ1.5mm。程高シ。色ハ紫紅色ナレドモ、往々稍淡クシテ綠色ヲ帶ブ。質ハ厚キ革質又ハ軟骨質ニシテ強韌ナリ。

產地: 高潮線ヨリ低潮線以下ニ亘ル岩礁ニ生ジ、太平洋及日本海沿岸ニ普通ニシテ太平洋岸ハ九州ヨリ室蘭ニ到リ、日本海ハ西南ヨリ北海道増毛ニ



及ブ。朝鮮兩沿岸。

本種ハ大西洋ニ産スル *Chondrus crispus* ニ於ケル如ク周圍ノ狀況ニ依ツテ甚シク形狀及大サヲ異ニス。下ニ掲グル形態ハ幾分一定セルモノト見ルベク、尙ホ仔細ニ區別スルトキハ幾多ノ形態ヲ加フルヲ得ベシ。

f. *canaliculatus* Okam. こまた、こつのみた。

短ク、單條又ハ1-2回分岐シ、線狀-楔形ニシテ溝狀ヲナシ、幅4-10mm長サ5-10cmアリ。

此形態ノモノハ太平洋沿岸ニ極メテ普通ニシテ日本海ニハ産セズ；高潮線ノ岩礁ニテ波浪ノ衝ニ當ル所ニ簇生ス。

f. *typicus* Okam. つのみた

扁平ニシテ多少廣ク、3-4回又狀ニ分岐シ、廣開シ、各部線狀又ハ楔形ニシテ縁邊ニ副枝アリ又ハ之ヲ缺ク。高サ10-17cm、幅1-5cm、アリ。

此形態ノモノハ太平洋岸ニ極メテ普通ニシテ折々日本海沿岸ニ見ラル、而シテ波ノ靜ナル場所ニテハ幅ノ廣クナル傾向ヲ有シ、殊ニ淡水ノ注入スル地方ニ於テ然リトス。潮線間ヨリ低潮線以下ニ亘レル岩礁ニ生ズ。

f. *giganteus* Okam. 異稱 *Chondrus giganteus* Yendo. おほばつのみた

體ハ高クシテ各部長ク、長距離ニ僅ニ又狀ヲナス。

此形態ノモノハ房州ヨリ常陸ニ到ル沿岸、殊ニ那珂川及利根川ノ流域ノ如キ所ニ限ラレタル地方的形態ノモノトス。體ノ大ナルヨリ大葉つのみたと稱スレドモ一般ニ之ト誤リテたんばのり (*Gratetoupia elliptica*) ヲおほばつのみたと稱ス。

f. *crispus* Okam. とちやか(日本海沿岸方言)

5-7回密ニ複又狀ニ分岐シテ扇狀ヲナシ往々澤山ニ細キ副枝ヲ側面ヨリ生ズ。

此形態ノモノハ日本海沿岸ニ極メテ普通ニシテ朝鮮沿岸ニモ存シ太平

洋沿岸ニハ多カラズ；日本海ハ干満ノ差殆ドナシト雖モ低潮線附近ノ岩礁ニ生ジ太平洋沿岸ニテハ潮線間ニアリ。

第291圖版。1: *Chondrus ocellatus* Holmes f. *typicus* Okam. ノ囊果アル體、江ノ島、 $\frac{1}{1}$ 。—2: f. *canaliculatus* Okam. ノ實ナキモノ；上: 三河篠島；下: 伊豆大島、 $\frac{1}{1}$ 。—3: f. *giganteus* Okam. ノ四分胞子囊アル體、犬吠崎産、 $\frac{1}{1}$ 。

第292圖版、1-5圖。1: *Chondrus ocellatus* f. *typicus* Okam. ノ四分胞子囊群ヲ有スルモノ、越中氷見産(大島氏)、 $\frac{1}{1}$ 。—2: f. *crispus* Okam. ノ囊果アル體；越中産、 $\frac{1}{1}$ 。—3及5: f. *crispus* ノ囊果ヲ有スルモノ、越後能生産、 $\frac{1}{1}$ 。—4: f. *crispus* ノ實ナキモノ、越前三國産、 $\frac{1}{1}$ 。

第293圖版。1: f. *giganteus* Okam. ノ囊果アル體、那珂湊産、 $\frac{1}{1}$ 。—2: f. *canaliculatus* Okam. ノ疣狀囊果ヲ有スルモノ、陸前小友村産、 $\frac{1}{1}$ 。—3: 體ノ横断面、 $\frac{245}{1}$ 。—4: 體ノ縦断面、 $\frac{500}{1}$ 。—5: 四分胞子囊群ヲ有スル體ノ頂部、 $\frac{1}{1}$ 。—6: 囊果ヲ有スル體ノ頂端、 $\frac{1}{1}$ 。—7: 2圖ノ一部ヲ水ニ浸シタルモノ、囊果、 $\frac{1}{1}$ 。—8-9: 7圖ノ囊果ノ一ヲ縦斷シタルモノ；囊果ノ大サ4×3mm、高サ1.5mm; $\frac{1}{1}$ 。

Dudresnaya minima Okam. 新種

ひめひびらうど 岡村稱

第292圖版、6-12圖

性質。體ハ直立シ、小形、殆ド絲狀ニシテ下部稍裸出シ、上部密ニ不規則ニ又狀様互生ニ分岐シテ廣開シ、倒三角形ノ輪廓ヲ有ス；助細胞ハ介生的ナリ。

産地：音戸ノ瀬戸(末廣氏)、伊豫(八木氏)。

記載：體ハ直立シ、小サク、細ク、圓柱狀ニシテ殆ド絲狀ヲナシ、極メテ柔カク粘滑ナリ、高サ3-4cm.、太サ畧ホ1mm.、下部裸出シテ多少莖ノ如ク(2-10mm)、夫ヨリ上ノ方ニ漸ク密ニ不規則ニ叉狀様互生ニ廣開シ、最末ノ小枝ハ小サクシテ尖リ、全體ノ輪廓ハ倒卵形又ハ倒三角形ヲナス。助細胞ハ介生的ニシテ、助細胞列ノ最下部ノ細胞ヨリ2番目又ハ3番目ノ細胞之ニ當リ、列ハ5-6關節ヨリ成ル。體ノ成長端ハ1列ノ細胞ニテ成リ、其各關節ヨリ2-3叉狀ニ分歧セル細胞列ニテ成レル枝ヲ輪生シ以テ皮部ヲ形成スル絲ヲ成ス。皮部ノ絲ノ細胞ハ直徑ノ2-3倍長シ、色ハ淡紫紅色ナリ。體ハ紙ニ密着ス。

從來知ラレタル此屬ノ植物中最小形ノ種類ナリ。

第292圖版, 6-12圖. 6-7: *Dudresnaya minima* Okam. 新種, ひめひぐらうど, ノ體, $1/1$ -8: 體ノ成長端, $500/1$ -9: 皮部ヲ作ル絲, $500/1$ -10: 助細胞列, $45/1$ -11: 助細胞ヨリ成胞子絲ヲ出セルモノ, $245/1$ -12: 1條ノ sporogene 絲(s)ト助細胞ト合一セルモノ, $245/1$.

Padina japonica Yamada

おきなうちは 岡村稱

第294圖版, 1-4圖.

體ハ3-6cm高ク、薄ク(厚サ約100 μ)、扇狀ニシテ、短莖ヲ有シ、下部ニ毛茸アリ、往々數片ニ裂ク; 各片ノ縁邊ハ全縁、時トシテハ淺ク裂ケタリ; 毛線ハ明ニシテ毛線ト毛線トノ間隔ハ通常稍狭ク(2mm.)、全體ヲ通ジテ2層ノ細胞ヨリ成リ、下側ノ細胞ハ上面ノモノヨリ大ナリ; 四分胞子囊群ハ體ノ上面ノ一ツ置キノ毛線ノ上部ニ連續セル1線ヲナス、然レドモ時トシテハ稍不規則ニ斷續セル數個ノ線ガ常態ノ群ノ下側ニ形成セラレ、コトアリテ不

完全ナル2列ノ線ヲナスコトアリ、皮膜ハ完全ニ存ス。體ハ下面ノ方ニ可ナリ石灰質ヲ存ス。色ハ淡黃褐色ニシテ olive 色ヲ含ム。質ハ薄クシテ體ハ紙ニ附着セズ。和名ハ能樂ノ翁ノ扇ニ因ム。

產地：薩摩、肥後、長門、伊豫、三河、志摩、越後。

第294圖版, 1-4圖. 1: *Padina japonica* Yamada, おきなうちは, ノ體, $1/1$ -2: 實ヲ有スル部分ノ半模形的表面觀; 1-5, 毛線; $1/1$ -3: 子囊群ヲ上ヨリ見タルモノ, $45/1$ -4: 子囊群ノ放射狀縱斷面, $45/1$.

Padina crassa Yamada

こなうみうちは 岡村稱

第294圖版, 5-11圖.

體ハ8-10cm高ク、短キ(約1cm.) 然レドモ廣キ稍厚キ莖ヲ有シ、扇狀ニシテ、基部厚ク、毛茸ヲ存シ、往々數個ノ同様ノ形セル裂片ニ分レ、體ノ基部ニ近ク6-8層ノ細胞ヨリ成リ、漸次上縁ノ方ニ4-2層トナル; 厚サ200-300 μ アリ; 各片ハ扇狀ヲナシ、膜質ニシテ縁邊全縁、概ネ裏面ニ薄ク石灰質ヲ存ス; 毛線間帯ハ稍廣シ(5-6mm.)、四分胞子囊群ハ各毛線間帯ニアリテ多少不連續ノ重圈狀線ヲ畫キ、時トシテハ2線ヲ成シ或ハ2毛線ノ間ニ不規則ニ散在ス、皮膜ハ之ヲ存ス。色ハ黃色ヲ帶ビタル鈍色ニシテ *Padina Commersonii* ノ色ニ似タリ。體ハ紙ニ着クコト充分ナラズ。

產地：筑前、肥前、長門、伊豫、相模、出雲、羽前。

第294圖版, 5-11圖. 5: *Padina crassa* Yamada, こなうみうちは, ノ實アル體ヲ表面ヨリ見タルモノ、裏面ノ一部折レ反リテ處々ニ顯ル, $1/1$ -6. 體ノ幼部ノ放射狀縱斷面, $300/1$ -7: 頂端ニ近キ部分ノ橫斷面, 200 μ 厚シ, $71/1$ -8: 苛性加里ヲ加ヘテ膨ラシタル中央部ノ橫斷面, $100/1$ -9: 基部ノ橫斷面, 300 μ 厚

シ, ¹⁰⁰/₁.-10: 體ノ表面ニアル子囊群ヲ示ス, ¹/₁.-11: 子囊群及毛ノ群ヲ通シテ放射狀ニ縦斷シタルモノ, ²⁴⁵/₁.

Padina australis Hauck

うすばうみうちは 岡村稱

第295圖版, 1-4圖.

體ハ直立シ, 11-15 cm. 高ク, 薄ク (50-90 μ 厚シ) 廣キ扇狀ニシテ往々多數ノ扇狀ノ裂片ニ裂ケ體ノ殆ド中央部マデ褐色ノ毛ヲ以テ蔽ハレ, 毛線ハ可ナリ明ナリ (2-3 mm. 距ル), 各片ハ全縁或ハ通常縁邊ヨリ淺ク裂ケタリ. 體ハ全部2層ヨリ成リ, 上層ノ細胞ハ下層ノモノヨリ稍小ナリ. 四分胞子囊群ハ一ツ置ノ毛線間帯ニ重圍狀線ヲナシテ存ス, 故ニ實アル帶ト實ナキ帶ト正シク交互ス, 皮膜ハ之ヲ存セズ. 體ノ下面ハ薄ク石灰ヲ存ス. 色ハ淡キ黃褐色ニシテ olive 色ヲ帯ブ. 質ハ甚ダ薄クシテ殆ド半透明ナリ. 體ハ紙ニ附着セズ.

產地: 臺灣, 琉球, 唐津, 土佐.

第295圖版 1-4圖. 1: *Padina australis* Hck., うすばうみうちは, ノ體, ¹/₁.-2: 體ノ横斷面, ¹⁰⁰/₁.-3: 四分胞子囊ヲ有スル體ノ放射狀縦斷面, 69 μ 厚シ, ¹⁰⁰/₁.-4: 實アル部分ノ表面, ¹/₁.

Padina Commersonii Bory

あかばうみうちは 岡村稱

第295圖版, 5-11圖.

體ハ小ニシテ, 4-6 cm. 高ク, 薄ク (約 140 μ) 膜質ニシテ扇狀ヲナシ, 形ノ完

全ナル始メノ體ノ兩端ハ稍耳朶狀ヲナシ, 往々數片ニ分レ, 短キ莖ヲ有シ, 基部ニ近ク毛茸ヲ存シ, 下面ニ薄ク石灰ヲ存ス, 各片ハ全縁時ニ淺ク分裂シ稀ニ上縁ヨリ小片ヲ副出シ 各部ハ始メノ體ト同様ノ形狀ヲナス. 毛線ハ明ニシテ, 毛線間帯ハ通常甚ダ狭ク, 2-3層ノ細胞ヨリ成リ, 下面ノ細胞ハ上面ノモノヨリ大ナリ. 四分胞子囊群ハ體ノ上部ノ上面ノ各毛線間帯ノ上側ニ連續セル線ヲナシテ連ナリ, 皮膜ヲ存セズ. 色ハ黄色ヲ帯ビタル鈍色ナリ. 體ハ紙ニ附着セズ.

產地: 臺灣, 琉球.

第295圖版 5-11圖. 5-6: *Padina Commersonii* Bory, あかばうみうちは, ノ中性ノ體, ¹/₁.-7: 體ノ横斷面, ²⁴⁵/₁.-8: 體ノ横斷面ニテ, 3層ノ細胞ヨリ成ル; 根毛ハ圖ニハ大ニ省キタリ, ¹⁰⁰/₁.-9: 老成セル體ノ横斷面, 138 μ 厚シ, ¹⁰⁰/₁.-10: 實アル體ノ一部, ¹/₁.-11: 子囊ヲ有スル部分ノ放射狀縦斷面, ²⁴⁵/₁.

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