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Title	On the Marine Algae of Susaki, Prov : Idzu,and its Vicinity
Author(s)	Segawa, Sokichi
Citation	北海道帝國大學理學部海藻研究所歐文報告, 1(1), 59-90
Issue Date	1935-03-20
Doc URL	https://hdl.handle.net/2115/48046
Type	departmental bulletin paper
File Information	1(1)_59-90.pdf

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On the Marine Algae of Susaki, Prov. Idzu, and its Vicinity

By

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Idzu Province seems to me to be a very interesting district in connexion with the distribution of marine algae in Japan. According to Dr. OKAMURA, the province may be divided into two parts from the viewpoint of the distribution of marine algae: Hachidyo Island and the remainder. The former was included by him in the subtropical region, the latter in the temperate. On the flora of the former, a detailed report was published by Dr. K. OKAMURA in 1930.* The present paper deals with the marine flora of the latter part.

In the following list, 200 species are enumerated, of which 30 belong to the Chlorophyceae, 52 to the Phaeophyceae, and the rest to the Rhodophyceae. Most of them were collected by me from April to September, 1934, almost all from the southern coast of the Idzu Peninsula: Arashidomari, Shirahama, Susaki, Shimoda, and Ôse, and some of them from the islands of Ô-shima, Ni-i-jima, and Shikine-jima, in June, 1934. Of the species enumerated in this paper, some subtropical algae were newly collected in this district, and four are new to science.

The study has been carried out at the Mitsui Institute of Marine Biology. I wish to express here my sincere thanks to Dr. K. OKAMURA, under whose direction this work has been carried on, and to Prof. Y. YAMADA, for his kind encouragement during the course of the investigation.

It is a great pleasure to extend my best thanks to Mr. T. MITSUI, the director of the Mitsui Institute of Marine Biology, for affording me the opportunity for this study.

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* OKAMURA, K.: On the algae from the Island Hatidyo (Records of Oceanographic Works in Japan, Tokyo, Vol. II, No. 2, 1930).

CHLOROPHYCEAE

MONOSTROMACEAE KUNIEDA, 1934

1. **Monostroma nitidum** WITTROCK, Monostr. p. 41, t. II, f. 7.
   Japanese name. *Hitoegusa.*
   Hab. Susaki.

ULVACEAE

2. **Ulva pertusa** KJELLMAN, Mar. Chlorophyc. Japan, 1897, p. 4, t. 1, f. 1–5; t. 3, f. 1–8; OKAM., Icon. Japan. Alg., IV, p. 79, pl. 169, f. 8.
   Japanese name. *Ana-awosa*
   Hab. Susaki.
3. **Enteromorpha Linza** (LINNE) J. AGARDH, Till Alg. Syst., VI, p. 134, t. 4, f. 110–112; OKAM., Icon. Japan. Alg., III, p. 163, pl. 138.
   Japanese name. *Usuba-awonori*
   Hab. Susaki.
4. **Letterstedtia japonica** HOLMES, New Mar. Alg. Japan, p. 250; OKAM., Icon., V, p. 188, pl. 250, f. 1–4.
   Japanese name. *Yaburegusa*
   Hab. Susaki.

VALONIACEAE

5. **Valonia macrophysa** KUETZING, Phyc. Gener. p. 307; Id. Tab. Phyc., VI., t. 81, f. 3.
   Japanese name. *Tamago-baronia.*
   Hab. Misaki; Susaki Shimoda, Mera (Prov. Idzu). Probably the northern limit of distribution in the country.
6. **Dictyosphaeria favulosa** DECAISNE, Class. alg. calcif., p. 32; ASKEN. Gazelle, p. 8, t. 11, f. 1–5; OKAM., Icon., I, p. 205, pl. 40, f. 13–24. Probably the northern limit of distribution in this country.
   Japanese name. *Kikkogusa*
   Hab. Susaki.
7. **Microdictyon japonicum** SETCHELL, Notes on Microd. (Calif. publ. Bot., XIII) p. 107. *Rhipidiphyllon reticulatum* OKAM., Illustr. Japan. Mar. Alg., Vol. I, p. 91, pl. 30, 1902.
   Japanese name. *Amimoyo*
   Hab. Susaki.

8. **Boodlea coacta** (DICKIE) MURRAY et DE TONI, in Journ. Linn. Soc., Bot., XXV, p. 243–245, pl. 49; OKAM., Illustr. Mar. Alg. Japan., Vol. I, p. 41, pl. 15.
   Japanese name. *Awomogusa.*
   Hab. Susaki.

9. **Cladophoropsis fasciculatus** (KJELLMAN) BOERGESEN, Contr. Conn. Gen. Siphonocl., 1905, p. 288; OKAM., Icon., IV, p. 75, pl. 164, f. 1–7. *Siphonocladus fasciculatus* KJELLM., Mar. Chlorophyc. Japan, 1897, p. 36, t. 7, f. 10–17.
   Japanese name. *Midorige.*
   Hab. Susaki.

CLADOPHORACEAE

10. **Cladophora Wrightiana** HARVEY, Char. New Alg., 1859, p. 333; OKAM., Illustr. Japan. Alg., Vol. I, p. 89, pl. 29.
   Japanese name. *Chyashiogusa.*
   Hab. Susaki.

11. **Chaetomorpha crassa** (C. AGARDH) KUETZING, Phyc. Germ., p. 204; Tab. Phyc., III, t. 59.
   Japanese name. *Hoso-juzumo.*
   Hab. Susaki.

12. **C. spiralis** OKAMURA, Icon., II, p. 162, pl. 95.
   Japanese name. *Futo-juzumo.*
   Hab. Ni-i-jima.

13. **Bryopsis corticulans** SETCHELL, P.B.–A., No. 262; COLLINS, Green Alg. N. Amer., 1909, p. 404.
   Japanese name. *Nezashi-hanemo.*
   Hab. Susaki.

14. **B. Harveyana** J. AGARDH, Till Alg. Syst. VIII, p. 22.
   Japanese name. *Kataha-hanemo.*
   Hab. Susaki.

DERBESIACEAE

15. **Derbesia Lamourouxii** (J. AGARDH) SOLIER, in Ann. de Sc. Nat., 1848, p. 162, t. 9; OKAM., Icon., IV, p. 195, pl. 200, f. 4–8.
   Japanese name. *Tsuyunoito.*
   Hab. Susaki.

CAULERPACEAE

16. **Caulerpa anceps** HARVEY, Fr. Isl. Alg., no. 67; WEBER VAN BOSSE, Monogr. Caul., p. 281, pl. 22, f. 6–10; OKAM., Icon., III, p. 94, pl. 125, f. 1–8. *C. brachypus* HARV., Char. new Alg., p. 332.
Japanese name. *Hera-iwadzuta.*
Hab. Susaki.

17. **C. Okamurai** WEBER VAN BOSSE, in OKAM. Alg. Ogasaw. (Bot. Mag., Tokyo, XI) p. 5, pl. I, f. 13–14; WEB. v. BOS., Monogr. Caul. p. 385, pl. 34, f. 9; OKAM., Icon., IV, p. 11, pl. 154, f. 1–8.
Japanese name. *Fusa-iwadzuta.*
Hab. Susaki.

18. **C. racemosa** var. **laetevirens** WEBER VAN BOSSE, Monogr. Caul., p. 366, pl. 33, f. 8, 16–22; OKAM., Icon., III, p. 67, pl. 119, f. 2–5.
Japanese name. *Surikogidzuta.*
Hab. Susaki.

19. **C. racemosa** var. **occidentalis** (J. AGARDH) BOERGESEN, Ecol. and Syst. Account Caul., 1907, p. 379; OKAM., Icon. VI, p. 59, pl. 280, f. 2–6. *C. recemosa* var. *Chemnitzia* WEB. v. BOS., Monogr. Caul. p. 370, pl. 31, f. 5–8.
Japanese name. *Etsuki-dzuta.*
Hab.

20. **C. Fergusoni** MURRAY, New sp. of Caul. (Trans. Linn. Soc., London, 1891), p. 212, pl. 53, f. 1–2; OKAM., Icon., III, p. 119, pl. 130, f. 10–14.
Japanese name. *Fujinohazuta.*
Hab. Gulf of Shimoda.

CODIACEAE

21. **Codium adhaerens** (CABRERA) C. AGARDH, Sp., p. 457; HARV. Phyc. Brit. t. 35; OKAM., Icon., III, p. 140, pl. 134, f. 1–3.
Japanese name. *Hai-miru.*
Hab. Susaki.

22. **C. coarctatum** OKAMURA, Icon., III, p. 141, pl. 134, f. 4–12.
Japanese name. *Nezashi-miru.*
Hab. Susaki.

23. **C. contractum** KJELLMAN, Mar. Chlorophy. Japan, 1897, p. 35, t. 2, f. 12; t. 7, f. 1–3; OKAM., Icon., III, p. 70, pl. 120, f. 1–8.

Japanese name. *Sakibuto-miru.*
Hab. Susaki.

24. **C. cylindricum** HOLMES, New Mar. Alg. Japan (Linn. Soc. Journ., Bot., XXXI) p. 250, pl. VII, f. 1, a, b; OKAM., Icon., III, p. 177, pl. 141.
Japanese name. *Naga-miru.*
Hab. Susaki.

25. **C. divaricatum** HOLMES, New Mar. Alg. Japan (Linn. Soc. l. c.) p. 250, pl. VII, f. 2, a, b; OKAM., Icon. IV, 155, pl. 136.
Japanese name. *Kuro-miru.*
Hab. Susaki.

26. **C. fragile** (SURINGAR) HARIOT, Alg. du Cap Horn, 1889, p. 32. *C. mucronatum* J. AG. var. *Californicum* J. AG., OKAM., Icon., III, p. 117, pl. 130, f. 1–9.
Japanese name. *Miru.*
Hab. Susaki.

27. **C. intricatum** OKAMURA, Icon. III, p. 74, pl. 120, f. 9–13.
Japanese name. *Motsure-miru.*
Hab. Susaki.

28. **C. latum** SURINGAR, Alg. Japon. p. 22, t. VII; OKAM., Icon. III, p. 180, pl. 142.
Japanese name. *Hira-miru.*
Hab. Susaki.

29. **C. mamillosum** HARVEY, Phyc. Austr., t. 41; OKAM., Icon., III, p. 151, pl. 135, f. 10–16.
Japanese name. *Tama-miru.*
Hab. Susaki.

30. **Halimeda cuneata** HERING. in Flora, 1846, p. 214; BARTON, Gen. Halimeda, p. 15, f. 7–14; OKAM., Icon., III, p. 202, pl. 147.
Japanese name. *Uchiwa-sabotengusa.*
Hab. Susaki.

PHAEOPHYCEAE

ECTOCARPACEAE

31. **Ectocarpus indicus** SONDER in ZOLL. Verg. der Ind. Arch. gesam. Pfl.; ASKEN. Gazelle, p. 19, t. V, f. 2, 10; Id., Ein Austr. Meeresalg.,

1894, p. 9, t. 1, f. 6; t. II, f. 7–8.
Japanese name. *Nagami-shiwomidoro.*
Hab. Susaki.

ELACHISTACEAE

32. **Elachista taeniaeformis** YAMADA, Mar. Alg. Mutsu Bay (Sc. Rep. Tohoku Imp. Univ., 4 Ser., Biol., III, No. 4, Fasc. 1) p. 509, f. 10, a–d.
Japanese name. *Hiru-namimakura.*
Hab. Susaki.

LEATHESIACEAE

33. **Petrospongium rugosum** (OKAMURA) SETCHLL et GARDNER, Melanophyceae, 1925, p. 509, pl. 39, f. 42–43. *Cylindrocarpus rugosa* OKAM., Icon., I, 1907, p. 20, pl. 5, f. 1–6.
Japanese name. *Shiwanokawa.*
Hab. Susaki.

34. **Leathesia difformis** (LINNE) ARESCHOUG, Phyc. Scand., p. 276; HAUCK Meeresalg., p. 355; OKAM., Icon., I, p. 80, pl. 18, f. 1–14.
Japanese name. *Nebarimo.*
Hab. Susaki.

ASPEROCOCCACEAE

35. **Myelophycus caespitosa** KJELLMAN, in ENGL. u. PRANTL, Nat. Pflanzenfam., I, 2, p. 202, f. 141; OKAM., Illustr. Mar. Alg. Japan, I, p. 53, pl. 19.
Japanese name. *Iwahige.*
Hab. Susaki.

SCYTOSIPHONACEAE

36. **Scytosiphon lomentarius** (LYNGBYE) J. AGARDH, Sp. Alg., I, p. 126; OKAM., Icon., I. p. 144, pl. 30.
Japanese name. *Kayamonori.*
Hab. Susaki.

37. **Colpomenia sinuosa** (ROTH) DERBES et SOLIER, Mamoir Phyc. Alg., 1856, p. 11, t. 22, f. 18–20; OKAM., Icon., I, p. 86, pl. 19, f. 11–12; pl. 20, f. 10–12.
Japanese name. *Fukuronori.*
Hab. Susaki.

38. **C. sinuosa** DERBES et SOLIER f. **deformans** S. and G., Alg. N. W. Amer., 1903, p. 242, pl. 18.
Japanese name. *Watamo.*
Hab. Shimoda.

39. **Hydroclathrus cancellatus** BORY, Dict. class. VIII, p. 419; HARV. Phyc. Austr., t. 98; OKAM., Icon., I, p. 18, pl. IV, f. 11; pl. V, f. 7–13.
Japanese name. *Kagomenori.*
Hab. Susaki.

40. **Endarachne Binghamiae** J. AGARDH, Anal. Alg., Cont., 1896, p. 26, pl. I, f. 5. *Phyllitis Fascia* (MULL.) KUTZ. in OKAM., Illustr. Mar. Alg. Japan, I, p. 27, pl. X.
Japanese name. *Habanori.*
Hab. Susaki.

CHORDARIACEAE

41. **Eudesme crassa** (SURINGAR) OKAMURA comb. nov.
Mesogloia crassa SUR., Illustr. Alg. Japan, I, p. 85, t. X–XII; OKAM., Icon., I, p. 89, pl. 20, f. 1–9. *Castagnea crassa* KUCK., Fragm. Monogr. Paeophyc., 1929–1930, p. 52, f. 64–65.
Japanese name. *Futo-modzuku.*
Hab.
Okamura is of opinion that the plant should be placed in *Eudesme* by reason of the structure of its frond not being parenchymatic but loosely set.

42. **Nemacystus decipiens** (SURINGER) KUCKUCK, Fragm. Monogr. *Phaeophyc.*, 1929–1930, p. 68, f. 92–93. *Cladosiphon decipiens* (SUR.) OKAM., Icon., II, p. 136, pl. 89. *Mesogloia decipiens* SUR., Mus. Bot. Leyde, T. I, p. 75, t. 25.
Japanese name. *Modzuku.*
Hab. Susaki.

ISHIGEACEAE OKAMURA, mscr.

Genus *Ishige* YENDO was put by YENDO under the FUCACEAE in his "Fucaceae of Japan"; but recently zoospores have been observed by different authors and the new family has consequently been established.

Of the establishment of the new family OKAMURA is of opinion that *Ishige* may be put in Chnoosporaceae, though *Chnoospora* has parenchymatic structure in the inner layer instead of filamentous one. Apart from this

difference of structure of frond uniseriate gametangia alone is known in *Chnoospora*, while in *Ishige* zoosporangia only. So, until the true nature of both kinds of reproductive organs of both genera is fully known, it certainly seems best, at present, to place *Ishige* in a family of its own.

43. **Ishige foliacea** OKAMURA mscr.
Japanese name. *Iroro.*
Hab. Susaki.

The present species has been established as a new one isolated from *I. Okamurai* YENDO, which has been taken by YENDO as a foliose type of that species (YENDO, Fucaceae of Japan, p. 155, pl. II, f. 1–3,4 b–c, 5–8).

44. **I. Okamurai** YENDO, l. c. p. 155, pl. II, f. 3, 4 a, 7.
Japanese name. *Ishige.*
Hab. Susaki.

SPHACELARIACEAE

45. **Sphacelaria tribuloides** MENEGHINI, Lett. a Carinaldi, p. 2, n. 1; SAUV. Rem. sur le Sphacel., Fasc. I, 1900–1903, p. 123–132, f. 28–30.
Japanese name. *Gunsen-kurogashira.*
Hab. Susaki.

46. **S. variabilis** SAUVAGEAU, l. c., p. 160, f. 37.
Japanese name. *Matazaki-kurogashira.*
Hab. Susaki.

47. **Halopteris filicina** (GRAT.) KUETZING, Phyc. Gener., p. 292, Tab. Phyc., V, t. 85, f. 1.
Japanese name. *Kashirazaki.*
Hab. Shimoda.

DESMARESTIACEAE

48. **Desmarestia tabacoides** OKAMURA, Icon., I, p. 187, pl. 38, f. 1–4; pl. 39, f. 9–13.
Japanese name. *Tabakogusa.*
Hab. Susaki, Shimoda.

CUTLERIACEAE

49. **Cutleria cylindrica** OKAMURA, Illustr. Mar. alg. Japan, I, p. 18, p. 85, pl. 28.
Japanese name. *Muchimo.*

Hab. Susaki.

SPOROCHNACEAE

50. **Carpomitra Cabrerae** (CLEM.) KUETZING, Phyc. Gener., p. 343; Tab. Phyc., IX, p. 37, t. 89, f. 1; OKAM., Icon., I, p. 61, pl. 14, f. 6–8; pl. 14, f. 1–14.
Japanese name. *Ichimegasa.*
Hab. Susaki.

LAMINARIACEAE

51. **Eckloniopsis radicosa** (KJELLMAN) OKAMURA, Icon., V, p. 143, pl. 240. *Laminaria radicosa* KJELLM. in KJELLM. och PETERS., On Japan. Lamin., p. 263, t. 10, f. 1.
Japanese name. *Antokume.*
Hab. Susaki.

52. **Ecklonia cava** KJELLMAN in KJELLM. och PETERS. l. c. p. 273, t. 10, f. 7–8; OKAM., Icon., V, p. 135, pl. 236, f. 1–7.
Japanese name. *Noro-kajime.*
Hab. Susaki.

53. **E. kurome** OKAMURA, Icon., V, p. 137, pl. 236, f. 8; pl. 237. *E. radicosa, Laevis* and *Rugulosa,* SUR., Illustr. Alg. Jap. Mus. Bot. d. Leide, 1874, Tome II, p. 1–2, pl. XV–XVIII.
Japanese name. *Kurome.*
Hab. Susaki.

54. **Eisenia bicyclis** (KJELLMAN) SETCHELL, Post emb. stage of Lamin. (Univ. Calif. Publ. Bot., 1905) p. 129; OKAM., Icon., V, p. 140, pl. 128–129.
Japanese name. *Arame.*
Hab. Susaki.

55. **Undaria pinnatifida** (HARVEY) SURINGAR, Illustr. Alg. Japon. p. 77, pl. 6–7; OKAM. Icon., V, p. 118, pl. 231, pl. 235, f. 1–10.
Japanese name. *Wakame.*
Hab. Susaki.

DICTYOTACEAE

56. **Zonaria Diesingiana** J. AGARDH, Sp. Alg. I, p. 109; OKAM., Icon., I, p. 16, pl. 4, f. 1–10.

Japanese name. *Shimaôgi.*
Hab. Susaki, Mera.(Prov. Idzu).

57. **Clanidophora repens** OKAMURA, Icon., I, p. 112, pl. 24, f. 13–18. *Chlanidote decumbens* OKAM., Contr. Knowl. Mar. Alg. Japan, III, p. 12, pl. I, f. 23–25 (Bot. Mag., Tokyo, XIII, p. 38).
Japanese name. *Futae-ôgi.*
Hab. Susaki.

58. **Padina arborescens** HOLMES, New Mar. Alg. Japan, p. 251, t. XII, f. 1; OKAM., Icon., VI, p. 3, pl. 251, f. 10; pl. 252.
Japanese name. *Umiuchiwa.*
Hab. Susaki.

59. **P. crassa** YAMADA, Notes on some Japan. Alg., II, p. 67, pl. XVII, f. 2. (Journ. Fac. Sci. Hokkaido Imp. Univ. Ser. V, vol. I, 1931).
Japanese name. *Kona-umi-uchiwa.*
Hab. Susaki.

60. **Spathoglossum variabile** FIGARI et DE-NOTARIS, Alg. Mar. Ross. Fig. IV; YENDO, Notes on Alg. new to Japan, IV, p. 49 (Bot. Mag., Tokyo, XXX, 1916).
Japanese name. *Hosoba-komongusa.*
Hab.

61. **Neurocarpus prolifera** OKAMURA, Icon., V, p. 190. *Heliseris prolifera* OKAM. in DE TONI u. OKAM., Neue Meeresalg. aus Japan (Ber. der deutsch. bot. Gesellsch., 1894) p. 74, t. 16, f. 1–5.
Japanese name. *Hera-yahadzu.*
Hab.

62. **N. undulata** (HOLMES) OKAMURA, Icon., V, p. 190. *Haliseris undulata* HOLM., New Mar. Alg. Japan (Linn. Soc. Journ., Bot., XXXI), p. 251, pl. 8, f. 1; OKAM., Icon. I, p. 51, pl. 11, f. 1–10.
Japanese name. *Shiwa-yahadzu.*
Hab. Susaki, Kisami.

63. **Dictyota dichotoma** (HUDSON) LAMOUROUX, Essai, p. 58; OKAM., Icon., III, p. 39, pl. 111–113.
Japanese name *Amijigusa.*
Hab. Susaki.

64. **D. linearis** (C. AGARDH) GREVILLE, Alg. Brit. pl. 43; OKAM., Icon., III, p. 29, pl. 107.
Japanese name. *Itoamiji.*

Hab. Susaki.

65. **Dilophus marginatus** (non J. AGARDH) OKAMURA, Icon., III, p. 154. *Dictyota marginata* OKAM., Icon., III, p. 33–36, pl. 108, f. 9, pl. 109.
Japanese name. *Fukurin-amiji.*
Hab. Susaki.

66. **Pachydictyon coriaceum** (HOLMES) OKAMURA, Contr. Knowl. mar. Alg. Japan, III, p. 13 (Bot. Mag., Tokyo, XIII, p. 39) pl. I, f. 31–34. *Glossophora coriacea* HOLM. New mar. Alg. Japan ,p. 251 (Journ. Linn. Soc., Bot., XXX).
Japanese name. *Sanadagusa.*
Hab. Susaki.

FUCACEAE

67. **Turbinaria ornata** J. AGARDH, Sp., I, p. 266; BARTON, Syst. and Str. Account of Turbin., p. 219.
Japanese name. *Rappa-moku.*
Hab. Cast up ashore, Arashidomari, near Susaki.

68. **Hizikia fusiformis** (HARVEY) OKAMURA, Icon., VI, no. 10, 1932, p. 99–100. *Turbinaria fusiformis* (HARV.) YENDO, Fuc. of Japan, p. 44, pl. 4, f. 1–7; OKAM., Icon., III, p. 109. *Sargassum fusiforme* (HARV.) SETCH., Hongkong Seaweeds, III, 1933, p. 43, pl. 17, f. 11–14 and 18, pl. 128–129, f. 5–12.
Japanese name. *Hiziki.*
Hab. Susaki.

69. **Sargassum duplicatum** J. AGARDH, Sp. Sarg. Austr., p. 90; OKAM., Icon., V, p. 10, pl. 205.
Japanese name. *Futae-moku.*
Hab. Susaki.

70. **S. giganteifolium** YAMADA in OKAM., Icon., V, p. 105, pl. 230.
Japanese name. *Ōba-nokogirimoku.*
Hab. Susaki.

71. **S. hemiphyllum** (TURNER) C. AGARDH, Sp., p. 39; J. AG., Sp. Sarg. Austr., p. 61; OKAM., Icon., V, p. 48, pl. 213.
Japanese name. *Iso-moku.*
Hab. Susaki.

72. **S. Horneri** (TURNER) C. AGARDH, Sp. p. 38; J. AG., Sp. I, p. 290; OKAM., Icon., V, p. 3, pl. 202.

Japanese name. *Aka-moku.*
Hab. Susaki.

73. **S. Kjellmanianum** YENDO, Fuc. of Japan, p. 102, pl. XV, f. 1–5; OKAM., Icon., V, p. 45, pl. 212.
Japanese name. *Hahaki-moku.*
Hab. Susaki.

74. **S. micracanthum** (KUETZING) YENDO, Fuc. of Japan, p. 123, pl. XV, f. 10–21; OKAM., Icon., V, p. 51, pl. 214.
Japanese name. *Togemoku.*
Hab. Susaki.

75. **S. nigrifolium** YENDO, Fuc. of Japan, p. 127, pl. XVI, f. 1–3; OKAM., Icon., V, p. 8, pl. 204.
Japanese name. *Narasamo.*
Hab. Susaki.

76. **S. nipponicum** YENDO, Fuc. of Japan, p. 153, pl. XVII, f. 11–16; OKAM., Icon., V, p. 186, pl. 249.
Japanese name. *Tamanashi-moku.*
Hab. Susaki.

77. **S. patens** C. AGARDH, Sp., p. 47; J. AG., Sp. I, p. 288; YENDO, Fuc. of Japan, p. 65, pl. 8; OKAM., Icon., V, p. 72, pl. 218.
Japanese name. *Yatsumata-moku.*
Hab. Susaki.

78. **S. piluliferum** (TURNER) C. AGARDH, Sp., p. 27; J. AG., Sp. I, p. 289; YENDO, Fuc. of Japan, p. 54, pl. 6, f. 1–7; OKAM., Icon., V, p. 69, pl. 216.
Japanese name. *Mamedawara.*
Hab. Susaki.

79. **S. pinnatifidum** HARVEY, Char. New Alg. Japan, p. 327; YENDO, Fuc. of Japan, p. 62, pl. VII, f. 1–3; OKAM., Icon., V, p. 75, pl. 220.
Japanese name. *Karakusa-moku.*
Hab. Susaki.

80. **S. Ringgoldianum** HARVEY, Char. New Alg. Japan, p. 327; YENDO, Fuc. of Japan, p. 146, pl. 18; OKAM., Icon., V, p. 32, pl. 210.
Japanese name. *Oba-moku.*
Hab. Susaki.

81. **S. sagamianum** YENDO, Fuc. of Japan, p. 151, pl.17, f. 6–10; OKAM., Icon., V, p. 55, pl. 215.

Japanese name. *Neji-moku.*
Hab. Susaki.

82. **S. Thunbergii** (MERT.) OKAMURA, Icon., V, p. 6, pl. 203. *S. Thunbergii* O. KUNZE, YENDO, Fuc. of Japan, p. 114, pl. XV, f. 5. *S. Swartzianum* YENDO, l. c. p. 119.
Japanese name. *Umitoranowo.*
Hab. Susaki.

83. **S. tortile** C. AGARDH, Sp., p. 15; J. AG., Sp. I, p. 291; YENDO, l. c., p. 85, pl. XII, f. 1–8; OKAM., Icon., V, p. 26, pl. 208.
Japanese name. *Yore-moku.*
Hab. Susaki.

RHODOPHYCEAE

BANGIALES

BANGIACEAE

84. **Erythrotrichia** sp.
Hab. Susaki.

85. **Porphyra auborbiculata** KJELLMAN, Japan. Art. Porphyra, 1897, t. 1, f. 1–3; t. 2, f. 5–9; t. 7, f. 4–7.
Japanese name. *Maruba-amanori.*
Hab. Susaki.

86. **P. tenera** KJELLMAN, l. c., p. 35, t. 1, f. 6; t. 4, f. 2–5; t. 5, f. 22–26.
Japanese name. *Asakusa-nori.*
Hab. Susaki.

FLORIDEAE

Nemalionales

HELMINTHOCLADIACEAE

87. **Trichogloea lubrica** (HARVEY) J. AGARDH, Epicr., p. 5–14; OKAM., Icon., IV, p. 188, pl. 197, f. 1–8.
Japanese name. Akebono-modzuku.
Hab. Ni-i-jima. Probably the northern limit of distribution in this country.

88. **Nemalion pulvinatum** GRUNOW, in HOLM., New mar. alg. Japan

(Linn. Soc. Journ., Bot., XXXI), p. 259, pl. XII, f. 6; OKAM., Icon., I, p. 39, pl. 9, f. 2–9.

Japanese name. *Kamogashira-nori.*

Hab. Susaki.

89. **Helminthocladia australis** HARVEY, Phyc. Austr. V, t. 272; OKAM., Icon., IV, p. 21, pl. 156 (exclusive dext.) pl. 157, f. 7–21.

Japanese name. *Beni-modzuku.*

Hab. Susaki, Ni-i-jima.

BONNEMAISONIACEAE

90. **Delisea pulchra** (GREVILLE) MONTAGNE, in Ann. de Sc. Nat., Bot., 3 Ser., t. 1, p. 158; YAMADA, Notes on some Japan. Alg., I (Journ. Fac. Sc. Hokkaido Imp. Univ. Ser. V, Vol. I, n. 1), p. 28. *D. japonica* OKAM., Icon., I, p. 139, pl. 29.

Japanese name. *Tamaitadaki.*

Hab. Susaki.

91. **Asparagopsis Sanfordiana** HARVEY, Phyc. Austr., t. VI; OKAM., Icon., I, p. 135, pl. 28, f. 1–12.

Japanese name. *Kagikenori.*

Hab. Susaki, Mera (Prov. Idzu).

CHAETANGIACEAE

92. **Scinaia japonica** SETCHELL, Scinaia Assemb. (Univ. Calif. Publ. Bot., VI, 1914), p. 98, pl. 11, f. 16–18, p. 124. *Sc. furcellata* (TURN.) BIV., OKAM., Icon., I, p. 10, pl. II, f. 19; pl. III, f. 16–20.

Japanese name. *Fusanori.*

Hab. Susaki.

93. **Gloeophloea Okamurai** SETCHELL, l. c., p. 115, pl. 15, f. 50–56; pl. 16, f. 57, p. 126.

Japanese name. *Nise-fusanori.*

Hab. Susaki.

94. **Galaxaura falcata** KJELLMAN, Florid. Slaegt. Galax., 1900, p. 73, t. 11, f. 12–21; t. 12, f. 1–4; t. 20, f. 33.

Japanese name. *Hira-garagara.*

Hab. Susaki.

95. **G. obtusata** (SOLIER) LAMOUROUX, Polyp. flex. p. 262.

Japanese name. *Fukuro-garagara.*
Hab. Susaki.

96. **G. Schimperi** DECAISNE, Mem. sur les Corall., 1842, p. 104; KJELLM., l. c., p. 61, t. 7, f. 19–20; t. 8, f. 16–22; t. 20, f. 1–2.
Japanese name. *Garagara.*
Hab. Susaki.

97. **Actinotrichia rigida** (LAMOUROUX) DECAISNE, in Ann. de Sc. nat., XVIII, p. 118; OKAM., Icon., IV, p. 30, pl. 158, f. 17–19.
Japanese name. *Sodegarami.*
Hab. Susaki.

Gelidiales

GELIDIACEAE

98. **Caulacanthus Okamurai** YAMADA, Notes on some Japan. Alg., V, 1933 (Journ. Fac. Sc., Hokkoido Imp. Univ., Ser. V, Vol. II, n. 3), p. 278. *Endocladia complanata* (non HARV.) OKAM., Icon., I, p. 129, pl. 27, f. 12–20; pl. 28, f. 13–17.
Japanese name. *Isodanzu.*
Hab. Susaki.

99. **Gelidium divaricatum** MARTENS, Preus. Exped. n. Ost-Asien, p. 30, t. 8, f. 4; OKAM., Illustr. Mar. Alg. Japan, I, p. 5, pl. II; Id. Gelidium and Pterocladia of Japan (Journ. Imp. Fisher. Inst.), Vol. 29, 1934, p. 50, pl. 16, f. 1–2.
Japanese name. *Hai-tengusa.*
Hab. Susaki.

100. **G. pacificum** OKAMURA, Icon., III, p. 99, pl. 126–127, f. 9–11; OKAM., Gelidium and Pterocladia of Japan, p. 51, pl. 16, f. 4–6.
Japanese name. *Ōbusa.*

101. **Gelidium subcostatum** OKAMURA, in SCHMITZ' Neue Japan. Florid. von K. OKAM. (Hedwigia, Bd. 33, 1894), p. 1, t. X; OKAM., Icon., I, p. 233, pl. 46; Id. Gelidium and Pterocladia of Japan, p. 52, pl. 18, f. 1.
Japanese name. *Hirakusa.*
Hab. Susaki.

102. **G. japonicum** (HARVEY) OKAMURA, Illustr. Mar. Alg. Japan, I, p. 57, pl. 21; Id. Gelidium and Pterocladia Japan, p. 52, pl. 18, f. 2. *Suhria Japonica* HARV., Alg. Wright. n. 26.

Japanese name. *Onikusa.*
Hab. Susaki.

103. **G. Amansii** LAMOUROUX f. **elatum** OKAMURA, Gelidium and Pterocladia Japan, p. 56, pl. 21.
Japanese name. *Kinu-kusa.*
Hab. Susaki.

104. **G. Amansii** LAMOUROUX f. **elegans** OKAMURA, Gelidium and Pterocladia Japan, p. 56, pl. 20; pl. 31, f. 3–5. *G. elegans* KUETZ., Phyc. Tab. XVIII, p. 18, t. 52, f. c–d.
Japanese name. *Makusa.*
Hab. Susaki.

105. **G. Amansii** LAMOUROUX f. **typica** OKAMURA, Gelidium and Pterocladia Japan, p. 55, pl. 29.
Japanese name. *Makusa.*
Hab. Susaki.

106. **G. linoides** KUETZING, Tab. Phyc. XVIII, p. 20, t. 58, f. a–b; OKAM. Gelidium and Pterocladia Japan, p. 59, pl. 26; pl. 32, f. 11–12.
Japanese name. *Hige-kusa.*
Hab. Susaki.

107. **Pterocladia tenuis** OKAMURA, Gelidium and Pterocladia Japan, p. 62, pl. 29; pl. 30, f. 2; pl. 33, f. 1–3.
Japanese name. *Oba-kusa.*
Hab. Susaki.

108. **Acanthopeltis japonica** OKAMURA, in YATABE's Iconogr. Flor. Japan, I, pt. 2, p. 157–158, pl. 39; Id. Illustr. Mar. Alg. Japan, I, p. 15, pl. VI.
Japanese name. *Yuikiri.*
Hab.

Cryptonemiales

ENDOCLADIACEAE KYLIN.

109. **Gloiopeltis complanata** (HARVEY) YAMADA, Notes on some Japan. Alg., III (Journ. Fac. Sc. Hokkaido Imp. Univ., Ser. V, vol. I, n. 3) p. 117. *Endotrichia cervicornis* SUR., Alg. Japon., 1780, p. 34, t. 21–22. *Gloiopeltis cervicornis* SCHMITZ, OKAM., Icon., II, p. 157, pl. 9.
Japanese name. *Hana-funori.*
Hab. Susaki.

110. **G. furcata** (POSTELS et RUPRECHT) J. AGARDH, Sp. II, p. 235; OKAM., Icon., V, p. 164, pl. 244. *G. coliformis* HARG., Char. New Alg., 1859, p. 332; Suring., Alg. Japon., p. 32, t. 19. *G. intricata* SURING., l. c. p. 33, t. 20.
Japanese name. *Fukuro-funori.*
Hab. Susaki.

111. **G. tenax** (TURNER) J. AGARDH, Alg. Medit., p. 68; SURING., Alg. Japon. p. 30; SURING. Illustr. esp. Gloiop. p. 29, t. I, f. 2, t. 14–18, t. 20, f. 6–10, t. 21.
Japanese name. *Ma-funori.*
Hab. Susaki. Probably the northern limit of distribution of the plant in this country.

GRATELOUPIACEAE

112. **Grateloupia elliptica** HOLMES, Mar. Alg. Japan, 1895, p. 253.
Japanese name. *Tambanori.*
Hab. Susaki.

113. **G. filicina** (WULFEN) C. AGARDH, Sp. I, p. 223; GREV. Alg. Brit., p. 151, f. 16; HARV. Phyc. Brit. t. c.
Japanese name. *Mukadenori.*
Hab. Susaki.

114. **G. imbricata** HOLMES, Mar. Alg. Japan, 1895, p. 255, t. 8, f. 2, a–b; OKAM., Icon., VII, p. 29, pl. 316, f. 1–3.
Japanese name. *Sakura-nori.*
Hab. Susaki.

115. **G. lancifolia** (HARVEY) OKAMURA, Contr. Knowl. Mar. Alg. Japan, III (Bot. Mag., Tokyo, XIII, 1899) p. 6; OKAM., Icon., I, p. 167, pl. 34, f. 9–14.
Japanese name. *Kyonohimo.*
Hab. Susaki.

116. **G. livida** (HARVEY) YAMADA, Notes on some Japan. Alg., II (Journ. Fac. Sc. Hokkaido Imp. Univ., Ser. V, I, n. 2), p. 74. *Ntmastoma livida* HARV. in Gray's list of Japan. pl. p. 332, 1857. *Schizymenia ligulata* SURING., Alg. Jap., p. 29, t. 15. *Grateloupia furcata* HOLM., Mar. Alg. Japan, p. 254, t. 10, p. 3, a–c (1865).
Japanese name. *Hira-mukade.*
Hab. Susaki.

117. **G. cornea** OKAMURA, Icon., III, p. 63, pl. 118.
Japanese name. *Tsuno-mukade.*
Hab. Susaki.

118. **Prionitis patens** OKAMURA, Contr. Knowl. Mar. Alg. Japan, III, (Bot. Mag., Tokyo, XIII, 1899) p. 3, pl. 1, f. 18–20; Id. Icon., II, p. 73, pl. 70.
Japanese name. *Hira-kintoki.*
Hab. Susaki.

119. **Polyopes polyideoides** OKAMURA, New or little known Alg. Japan (Bot. Mag., Tokyo, IX, 1895), p. 480, pl. 9, f. 3–7; Id., Icon., II, p. 45, pl. 63.
Japanese name. *Matabô.*
Hab. Susaki.

120. **Carpopeltis angusta** (HARVEY) OKAMURA, Icon., II, p. 66, pl. 67. *Gymnogongrus ligulatus* var. *angustus* HARV., Char. New Alg. Japan, n. 29.
Japanese name. *Kintoki.*
Hab. Susaki.

121. **C. articulata** OKAMURA, Icon., III, p. 70, pl. 68. *Prionitis articulata* OKAM., Contr. Knowl. Mar. Alg. Japan, III (Bot. Mag., Tokyo, 1899) p. 4, pl. 1, f. 3–4.
Japanese name. *Fushikintoki.*
Hab. Susaki.

122. **C. affinis** OKAMURA, Icon., VII, p. 30, pl. 316, f. 4–15. *Gigartina affinis* HARV., Char. new alg., n. 31.
Japanese name. *Matsu-nori.*
Hab. Susaki.

123. **C. crispata** OKAMURA, Icon., VII, p. 32, pl. 317, f. 6–11.
Japanese name. *Tosaka-matsu.*
Hab. Susaki.

124. **C. divaricata** OKAMURA, Icon., VII, p. 31, pl. 317, f. 1–5.
Japanese name. *Hitotsu-matsu.*
Hab. Susaki.

RHIZOPHYLLIDACEAE

125. **Chondrococcus Hornemanni** (MERTENS) SCHMITZ, Mar. Florid. v. deutsch. Ostafr., 1895, p. 170; OKAM., Icon., IV, p. 158, pl. 190, f.

1–14.
Japanese name. *Hosoba-naminohana.*
Hab. Susaki.

SQUAMARIACEAE

126. **Peyssonnelia caulifera** OKAMURA, Contr. Knowl. Mar. Alg. Japan, III (Bot. Mag., Tokyo, 1899) p. 8, t. 1, f. 26–30.
Japanese name. *Etsuki-iwanokawa.*
Hab. Susaki.

CORALLINACEAE

127. **Corallina radiata** YENDO, Coral. ver. Japon., 1902, p. 26, pl. III, f. 6; pl. VII, f. 7.
Japanese name.
Hab. Shimoda.

CALLYMENIACEAE KYLIN.

128. **Callophyllis adnata** OKAMURA, Icon., VI, p. 79, pl. 289.
Japanese name.
Hab. Susaki, Mera (Prov. Idzu).

129. **C. chilensis** J. AGARDH, OKAM., Alg. Japon. Exsic., Fasc. I, n. 12. *Microcoelia chilensis* J. AG., Epicr. p. 227; OKAM., Illustr. Mar. Alg. Japan, I, p. 7, pl. III.
Japanese name. *Kinu-hada.*
Hab. Susaki.

130. **C. crispata** OKAMURA, Contr. Knowl. Mar. Alg. Japan, II (Bot. Mag., Tokyo, X, 1896), p. 21, pl. III, f. 1–2; Id., Icon., IV, p. 32, pl. 159, f. 1–5.
Japanese name. *Hirohano-tosakamodoki.*
Hab. Mikomoto.

131. **C. japonica** OKAMURA, in DE TONI u. OKAM. Neue Meeresalg. aus Japan, (Ber. d. deutsch. bot. Gesselsch., 1894) p. 77, t. XVI, f. 13–17; OKAM., Illustr. Mar. Alg. Japan, I, p. 63, pl. 22.
Japanese name. *Hosobano-tosakamodoki.*
Hab. Susaki.

132. **C. palmaeformis** YAMADA, Notes on some Japan. Alg., I (Journ. Fac. Sc. Hokkaido Imp. Univ., Ser. V, Vol. I, 1930) p. 30, pl. III,

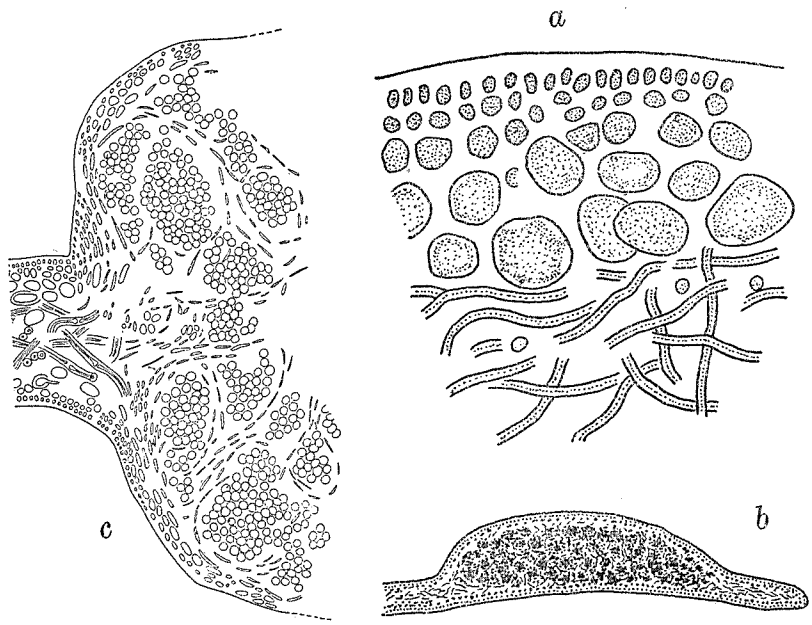


Fig. 1. *Callymenia callophylloides* OKAMURA et SEGAWA
a. *Cross-section of the frond.* ×400.
b. Cross-section of a cystocarp. ×28.
c. Part of a cystocarp. ×100.

f. 2; OKAM., Icon., VI, p. 81, pl. 290.
Japanese name. *Yatsudebano-tosakamodoki.*
Hab. Susaki.

133. **Callymenia callophylloides** OKAMURA et SEGAWA sp. nov.
Pl. XIX, 1, Text-fig. 1.

Frond shortly stipitate, soon dividing into subdichotomo-palmate, crenulated, broadly linear segments, ending in roundish apices, with a few obovato-roundish, shortly pedicellel proliferations from margins; cystocarps roundish, slightly swollen on the surface of frond along margin of upper portion of main branches; tetraspores unknown.

Japanese name. *Hanagata-karimenia.*

Hab. Cast up ashore; Ikenodan near Susaki.

Root a small scutate disc. Frond broadly linear, membranaceous, shortly stipitate with subcylindrical stem, soon dividing into many main branches. Main branches irregularly divided into subpalmato-dichotomous lobes, with a few roundish or obovate shortly pedicelled proliferations from margins. Margin crenulated, ending in broadly roundish apices. Frond attaining a height of 4–5 cm, with a breadth of 5–7 mm. Cystocarps

forming roundish spots, slightly swollen above the surface of the frond, mostly near margin of upper portions of branches. Tetraspores and antheridia unknown. Colour purplish red. Substance membranaceous; the plant closely adheres to paper in drying. Cortical layer of the frond is composed of 3–4 layers of roundish cells gradually becoming smaller outward from inner larger ones. Plant in question has an appearance like a species of *Callymenia* and belongs to the subgen. Euhymenia.

134. **Callymenia perforata** J. AGARDH, Epir. p. 219; YENDO, Notes on Alg. New to Japan, II (Bot. Mag., Tokyo, Vol. XXVIII), p. 273. *C. cribrosa* HARV., OKAM., Icon. II, p. 127, pl. 86–87.
Japanese name. *Tsukasaami.*
Hab. Mera (Prov. Idzu).

Gigartinales

CALOSIPHONIACEAE

135. **Calosiphonia vermicularis** (J. AGARDH) SCHMITZ, Ueb. Syst. Florid. (Flora, 1889) p. 453; OKAM. Icon., I, p. 243, pl. 49, f. 9–23.
Japanese name. *Numerigusa.*
Hab. Shimoda.

NEMASTOMACEAE

136. **Schizymenia Dubyi** (CHAUVIN) J. AGARDH, Sp. II, p. 171; YAMADA, Mar. Alg. Mutsu Bay, II (Sci. Rep. Tohoku Imp. Univ., 4 Ser., Biol., Vol. III, no. 4, Fasc. 1, 1928) p. 532, f. 24; OKAM., Icon., VII, p. 10, pl. 307, f. 1–5; pl. 308, f. 12.
Japanese name. *Benisunago.*
Hab. Susaki.

SOLIERIACEAE KYLIN, 1932

137. **Solieria robusta** (GREVILLE) KYLIN, Gigartinales, 1932, p. 18. *Rhabdonia robusta* J. AG., YENDO, Notes on Alg., II (Bot. Mag., Tokyo, XXVIII, 1914) p. 273; OKAM., Icon., IV, p. 102–105; pl. 174.
Japanese name. *Mirin.*
Hab. Susaki.

138. **Meristotheca papulosa** (MONTAGNE) J. AGARDH, Epicr., p. 584;

BOERGESEN, Ind. Rhodophyc. Bombay (Kew Bull., 1934, n. 1), p. 13, f. 10–11. *Eucheuma papulosa* COTTON and YENDO, OKAM., Icon., V, p. 123, pl. 234–235, f. 11–14.

Japanese name. *Tosakanori.*

Hab. Susaki.

139. **Eucheuma** sp.

Hab. Ohshima (Prov. Idzu).

HYPNEACEAE KYLIN, 1932

140. **Hypnea musciformis** (WULF.) LAMOUROUX, Essai, p. 43; OKAM., Icon., II, p. 35, pl. 59, f. 7; pl. 60, f. 7–11.

Japanese name. *Kagi-ibaranori.*

Hab. Susaki.

141. **H. pannosa** J. AGARDH, Sp. Alg. II, p. 453; OKAM., Icon., I, p. 47, pl. 10, f. 18–20.

Japanese name. *Koke-iabara.*

Hab. Mikomoto.

PLOCAMIACEAE KYLIN, 1932

142. **Plocamium Telfairiae** HARVEY, KUETZ. Sp. p. 885; YENDO, Notes on Alg. New to Japan, III (Bot. Mag., Tokyo, XXIX, 1915) p. 111. *Plocamium abnorme* H. et H., OKAM., Icon., III, p. 1, pl. 101.

Japanese name. *Yukari.*

Hab. Susaki.

SARCODIACEAE KYLIN, 1932

143. **Sarcodia ceylanica** HARVEY, Alg. Alg. Ceyl. no. 7; KUETZ., Tab. Phyc. 19, t. 93; KYLIN, Florideengat. Gigart., 1932, p. 56. *S. Montagneana* (H. et H.) J. AG., OKAM. Icon., IV, p. 110, pl. 177, f. 1–2; pl. 178, f. 8–11.

Japanese name. *Atsubanori.*

Hab. Susaki.

GRACILARIACEAE KYLIN, 1932

144. **Gracilaria confervoides** (LINNE) GREVILLE, Alg. Brit., p. 123; OKAM., Icon., IV, p. 1, pl. 151.

Japanese name. *Ogonori.*

Hab. Susaki.

145. **G. gigas** HARVEY, Alg. Wright. (Proceed. Am. Acad., IV), p. 330; OKAM., Icon., V, p. 159, pl. 241–242, f. 1–4.
Japanese name. *Ō-ogonori.*
Hab. Susaki.

GIGARTINACEAE KYLIN, s. str.

146. **Chondrus ocellatus** HOLMES f. **canaliculatus** OKAMURA, Icon., VI, p. 84, pl. 291, f. 2; pl. 293, f. 2.
Japanese name. *Komata.*
Hab. Susaki.

147. **C. ocellatus** HOLMES f. **typicus** OKAMURA, Icon., VI, p. 84, pl. 291, f. 1; pl. 292, f. 1.
Japanese name. *Tsuno-mata.*
Hab. Susaki.

148. **C. filiformis** OKAMURA et SEGAWA sp. nov. Pl. XIX, 2, Text-fig. 2–3.
Fronds filiform or cylindrical, irregularly branched in divaricately alternate, opposite or subdichotomous manner, with sparse branchlets curved and ending in sharpish points; tetraspores forming oblong sori; cystocarps unknown.
Hab. Washed ashore; Susaki.

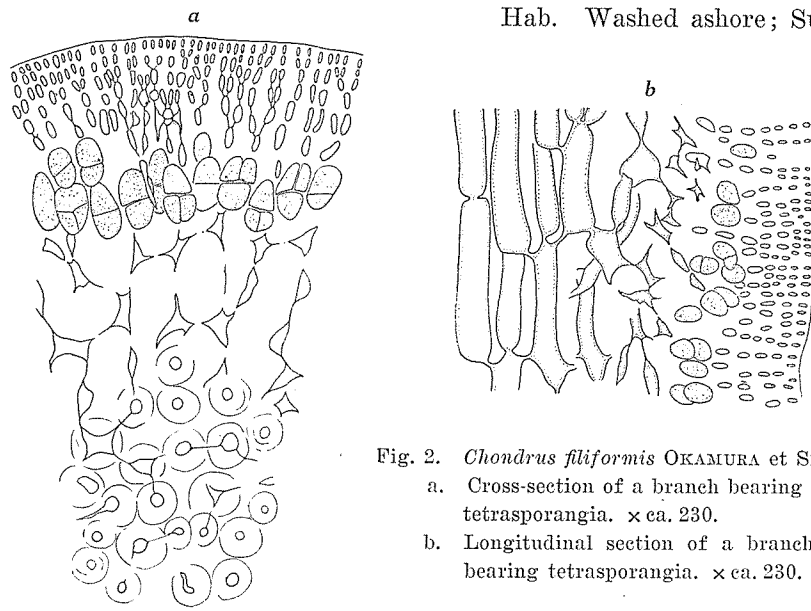


Fig. 2. *Chondrus filiformis* OKAMURA et SEGAWA
a. Cross-section of a branch bearing tetrasporangia. × ca. 230.
b. Longitudinal section of a branch bearing tetrasporangia. × ca. 230.

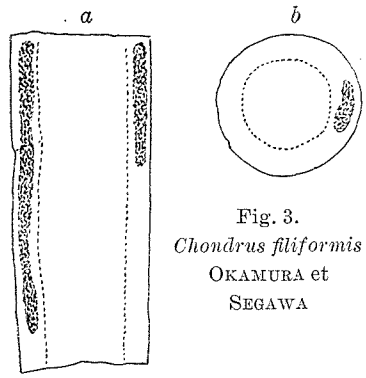


Fig. 3.
Chondrus filiformis OKAMURA et SEGAWA

a. Longitudinal section of two tetrasporangial sori. ×20.
b. Cross-section of a tetrasporangial sorus. ×20.

Root unknown. Fronds filiform or subcylindrical, irregularly and divaricately branched. Branches opposite, alternate or subdichotomous, widely parted, with sparse branches curved here and there; ending in sharpish point. Fronds 5–7 cm high, 1–1.5 mm broad in main segments. Tetraspores a little elongated, spot-like or oblong sori in infra-cortical layer. Structure that of the genus, made of densely packed longitudinal medullary cells. Colour purplish red fading to greenish yellow. Substance cartilaginous, the plant not adhering to paper in drying.

The present plant appears at first glance to resemble *Gigartina tenella* HARV. in external habit by having sharpish ramuli.

149. **Gigartina intermedia** SURINGAR, Alg. Japon., p. 30, t. 17, B; OKAM., Icon, I, p. 172, pl. 35, f. 1–5.
Japanese name. *Kainori.*
Hab. Susaki.

150. **G. Teedi** (ROTH) LAMOUROUX, Essai, p. 49, t. 4, f. 11; OKAM., Icon., I, p. 163, pl. 33, f. 9–12.
Japanese name. *Shikinnori.*
Hab. Shimoda.

151. **G. tenella** HARVEY, Char. New Alg. (Proceed Am. Acad. IV, 1859), p. 331, n. 52; SURING., Alg. Japon., p. 29, t. 17, A; OKAM., Icon., I, p. 159, pl. 33, f. 1–8.
Japanese name. *Suginori.*
Hab. Susaki.

152. **G. mamillosa** J. AGARDH, Alg. Medit. p. 104; YENDO, Notes on Alg. New to Japan (Bot. Mag., Tokyo, XXX, 1916) p. 58.
Japanese name. *Ikano-ashi.*
Hab. Shimoda; Prov. Mutsu, Enoshima and Shimoda (YENDO).

153. **Stenogramma interrupta** (AGARDH) MONTAGNE, in DUCHART., Rev. Bot. (1846), p. 483; HARV., Phyc. Brit. t. 157; OKAM., Illustr. Mar. Alg. Japan, I, p. 29, pl. XI.
Japanese name. *Hasujigusa.*

Hab. Susaki.

154. **Gymnogongrus divaricatus** HOLMES, Mar. Alg. Japan, 1895, p. 255, t. VII, f. 3 a–b; OKAM., Icon., VII, p. 16, pl. 310, f. 1–5.
Japanese name. *Ōmata-okitsunori.*
Hab. Susaki.

155. **G. flabelliformis** HARVEY, in GRAY's List of Japan. Pl., p. 332; SURING., Alg. Japan. p. 36, t. XXIV, B; OKAM., Icon., IV, p. 128, pl. 181, f. 7–9; pl. 182, f. 9–14.
Japanese name. *Okitsunori.*
Hab. Susaki.

156. **Ahnfeltia furcellata** OKAMURA, Icon., VII, p. 16, pl. 310, f. 6–10.
Japanase name. *Fusa-saimi.*
Hab. Ohshima and Ni-i-jima (Prov. Idzu).

157. **A. paradoxa** (SURINGAR) OKAMURA, Icon., VII, p. 13, pl. 309, pl. 310, f. 11–16. *Gymnogongrus*(?) *paradoxus* SURING. Illustr., 1874, II, p. 13, t. VII–IX(XXI–XXII). *G. furcellatus* J. AG. var. *japonicus* HOLMES, Mar. Alg. Japan, 1895, p. 256, t. XI, f. 2.
Japanese name. *Harigane.*
Hab.

Rhodymeniales

CHAMPIACEAE

158. **Champia expansa** YENDO, Three New Alg. Japan (Bot. Mag., Tokyo, XVII, 1903) p. 103, pl. III, f. 10–13; OKAM., Icon., IV, p. 111, pl. 178, f. 1–7.
Japanese name. *Hira-watsunagisō.*
Hab. Susaki.

159. **C. japonica** OKAMURA, Icon., VI, p. 49, pl. 276.
Japanese name. *Hera-watsunagi.*
Hab. Susaki.

160. **C. parvula** (C. AGARDH) J. AGARDH, Epicr. p. 303; OKAM., Icon., II, p. 89, pl. 76.
Japanese name. *Watsunagisō.*
Hab. Susaki.

161. **Lomentaria catenata** HARVEY in Gray's List of Plants col. in Japan, p. 331; OKAM., Illustr. Mar. Alg. Japan, I, p. 75, pl. 26.
Japanese name. *Fushitsunagi.*

Hab. Susaki.

162. **L. hakodatensis** YENDO, Nov. Alg. Japon., Decas I–III (Bot. Mag., Tokyo, XXXIV, 1920) p. 6.
Japanese name. *Hoso-fushitsunagi.*
Hab. Susaki.

163. **Gastroclonium ovale** (HUDSON) KUETZING, Phyc. gen., 1843, p. 441; OKAM., Icon., I, p. 74, pl. XVII, f. 1–10.
Japanese name. *Isomatsu.*
Hab. Shimoda and Nabeta.

164. **Coelarthrum Muelleri** (SONDER) BOERGESEN. Some Ind. Rhodophyc. Presid. Bombay (Bull. Kew Gard., 1931, n. 1) p. 9, f. 6. *Erythrocolon Muelleri* OKAM., Illustr. Mar. Alg. Japan, I, p. 43, pl. 16.
Japanese name. *Fukurotsunagi.*
Hab. Susaki and Shimoda.

RHODYMENIACEAE

165. **Rhodymenia coacta** OKAMURA et SEGAWA sp. nov.
Pl. XX, 1.

Fronds linear, membranaceous, irregularly lobed, crenulated, decumbent, attached to the substratum and to each other by root-like processes from margins, forming roundish large mat-like mass; tetraspores forming irregular sori on the upper portion of frond.

Japanese name. *Hana-gasane.*

Hab. Shikineshima. On rocks between tide marks near high tide.

Fronds linear, membranaceous, irregularly lobed in subdichotomous manner, curled and crisped like a crest, ending in roundish or bifid apices, 1.5–2 cm high, 2–4 mm broad; imbricately decumbent, being attached to the substratum and to each other by emitting short subterete radical processes from margins and by adnation of surfaces forming low heap of a roundish mat-like mass of large extension. Thickness of the frond 230–400 μ or more, that of the mat about 1 cm. Frond consisting of 4 or more layers of roundish almost empty cells, with rather thick wall. Tetraspores forming large, irregular sori on the upper portion of fond. Cystocarps unknown. Colour rosy red. Substance somewhat thickly membranaceous.

166. **Fauchea spinulosa** OKAMURA et SEGAWA sp. nov.
Pl. XX, 2, Text-fig. 4–5.

Frond flat, broadly linear, dichotomo-flabellate, tapering to sharpish apex, with spinules along margins and from surface; tetraspores nema-

theciose; cysto-carps formed beneath spinules and crowned with 1–4 short subconical spines.

Japanese name. *Toge-madara.*

Hab. Washed ashore; Susaki, ten fath. deep, Sept. 1934.

Frond flat, thin leathery, broadly linear, 4–5 times dichotomo-flabellate, lying decumbent by forming radical processes from margins and undersurface with branches attaching to each other, without lateral proliferations; segments about 5 mm broad, a little cuneate beneath forks, gradually tapering upward into sharpish point, 9 cm high. Simple or bifid spinules arising from margins and mostly from either one of surfaces. Tetraspores cruciate forming irregularly shaped nemathecia of different sizes, densely scattered over the surface of frond. Cystocarps formed beneath spinules and become crowned with 1–4 short subconical spines; nucleus surrounded with fine elegant network. Frond internally consisting of 2–3 layers of almost empty roundish cells of diameter of 125–140 μ, covered by rather closely set anticlinal moniliform filaments of cortical layer, 55–60 μ thick, of which inner ones are gradually larger. Frond attaining the thickness of about 320–330 μ. Colour dark red turning to almost black in drying. Substance thin cartilaginous membranaceous and the plant not adhering to paper in drying.

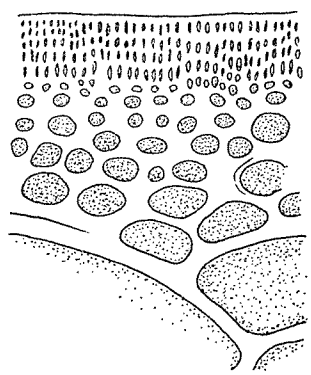


Fig. 4. *Fauchea spinulosa* Okamura et Segawa
Cross-section of the frond. × 320.

Plant showing an affinity with *F. Freyeana* Setch.

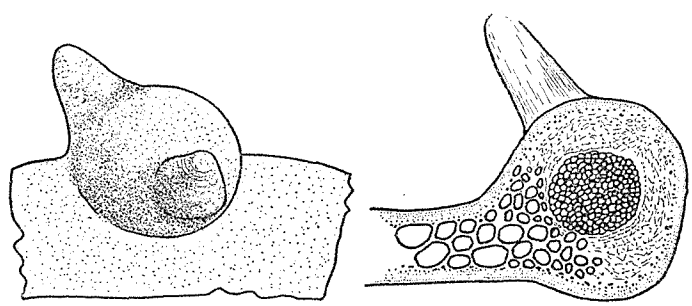


Fig. 5. *Fauchea spinulosa* Okamura et Segawa
Cystocarps. × 25.

Ceramiales

CERAMIACEAE

167. **Griffithsia japonica** OKAMURA, Icon., VI, p. 36, pl. 270.
Japanese name. *Kazashigusa.*
Hab. Susaki and Shimoda.

168. **G. subcylindrica** OKAMURA, Alg. Isl. Hatidyo (Record Oceanogr. Works in Japan, Vol. II, 1930) p. 99, pl. VIII.
Japanese name. *Kinuito-kazashigusa.*
Hab. Susaki.

169. **Callithamnion callophyllidicola** YAMADA, Notes on Some Japan. Alg. IV, p. 271, pl. V–VI, f. b, with text fig. 3 (Journ. Fac. Sc. Hokkaido Imp. Univ. Ser. V, Vol. II, n. 2, 1932).
Japanese name. *Kinuitogusa.*
Hab. Susaki.

170. **Antithamnion plumula** (ELLIS) THURET, in LE JOL., List Alg. Cherb. 1863, p. 112; OKAM., Icon., IV, p. 157, pl. 189.
Japanese name. *Yotsugasane.*
Hab. Susaki.

171. **Spyridia elongata** OKAMURA, Icon., IV, p. 4, pl. 152, f. 4–13.
Japanese name. *Naga-ubugegusa.*
Hab. Susaki.

172. **Ptilota dentata** OKAMURA, Ptilota dentata sp. nov. (Bot. Mag., Tokyo, Vol. VI, 1892) p. 149–150, pl. 4; OKAM., Illustr. Japan Alg., I, p. 49, pl. 18.
Japanese name. *Beni-hiba.*
Hab.

173. **Carpoblepharis Schmitziana** (REINBOLD) OKAMURA, Microcladia and Carpoblepharis (Bot. Mag., Tokyo, XIV, 1900) p. 8, pl. 1, f. 14–17; Id., Icon., I, p. 7, pl. 2, f. 5–18.
Japanese name. *Chirimomiji.*
Hab. Susaki.

174. **Ceramium tenerrimum** (MARTENS) OKAMURA, Icon., IV, p. 112, pl. 179; f. 1–7. *Hormoceras tenerrimum* MART., Tange Preus. Exped., p. 146, t. VIII, f. 2; *Hormoceras flaccidum* (non HARV.) SURING. Alg. Japon., 1870, p. 28, t. XIII.
Japanese name. *Ke-igisu.*

Hab. Susaki.

175. **C. Hypnaeoides** (J. AGARDH) OKAMURA, On *Campyraephora Hypnaoides* J. AG. (Bot. Mag., Tokyo, Vol. 41, 1927), p. 365, f. A–B. *Campyraephora Hypnaeoides* J. AG. Sp. II, p. 150; OKAM., Icon., II, p. 99, pl. 79, f. 1–13.
Japanese name. *Egonori.*
Hab. Susaki.

176. **C. paniculatum** OKAMURA, Contr. Knowl. Mar. Alg. Japan, II (Bot. Mag., Tokyo, X, 1896) p. 36, pl. 3, f. 22–23; Id., Icon., IV, p. 114, pl. 179, f. 8–16.
Japanese name. *Hari-igisu.*
Hab. Susaki.

177. **Centroceras clavulatum** MONTAGNE, Fl. Alg., p. 140; J. AG., Sp. II, p. 148. *Ceramium clavulatum* AG., OKAM., Illustr. Japan. Alg., I, p. 47, pl. XVII.
Japanese name. *Toge-igisu.*
Hab. Susaki.

178. **Microcladia corallinae** (MARTENS) OKAMURA, On Microcl. and Carpobl. p. 6, pl. 1, f. 8–13 (Bot. Mag., Tokyo, XIV, 1900); OKAM., Icon., I, p. 5, pl. 1, f. 11–20; pl. 2, f. 1–4.
Japanese name. *Nikusaeda.*
Hab. Susaki.

179. **M. elegans** OKAMURA, Icon., I, p. 1, pl. 1, f. 1–10.
Japanese name. *Saeda.*
Hab. Susaki.

180. **M. dentata** OKAMURA, Icon., IV, p. 46, pl. 162, f. 4–9.
Japanese name. *Kosuji-saeda.*
Hab. Mera (Prov. Idzu).

181. **Wrangelia Argus** MONTAGNE, Syll. gen. spec. Cryptog., p. 444; BOERGESEN, Mar. Alg. Dan. W. Ind., 1915, p. 116, f. 125–126; OKAM., Icon., VII, n. 5, p. — pl. 324.
Japanese name. *Rangelia.*
Hab. Susaki.

DELESSERIACEAE

182. **Martensia denticulata** HARVEY, Phyc. Austr. t. 127. *M. elegans* HARV., OKAM., Icon., II, p. 5, pl. 53; pl. 54, f. 1–9.

Japanese name. *Ayanishiki.*
Hab. Susaki.

183. **Hypoglossum geminatum** OKAMURA, Icon., I, p. 156, pl. 32, f. 7–12, Text fig.
Japanese name. *Beni-hanori.*
Hab. Susaki and Mikomoto.

184. **Hemineura Schmitziana** DE TONI et OKAMURA, Neue Meeresalg. aus Japan (Ber. d. deutsch. bot. Gesellsch., 1894, Bd. XII), p. 76, T, XVI, f. 6–12; OKAM., Illustr. Mar. Alg. Japan, I, p. 23, pl. 8.
Japanese name. *Habutaenori.*
Hab. Susaki.

185. **Acrosorium uncinatum** (J. AGARDH) KYLIN, Stud. ueb. Delesseriaceen, p. 78, f. 61. *Nitophyllum uncinatum* (TURN.) J. AG., OKAM., Icon., I, p. 121, pl. 26 (im Part.) f. 1.
Japanese name. *Kagi-usubanori.*
Hab.

186. **A. Yendoi** YAMADA, Notes on some Japan. Alg., I (Journ. Fac. Sc., Hokkaido Imp. Univ., Ser. V, Vol. I, n. 1) p. 33, pl. V, f. 4.
Japanese name. *Hai-usubanori.*
Hab. Susaki.

DASYACEAE

187. **Heterosiphonia joponica** YENDO, Nov. Alg. Japon., Decas I–III, n. 23 (Bot. Mag., Tokyo, Vol. 34, 1920), p. 8; OKAM., Icon., IV, p. 68, pl. 167.
Japanese name. *Isohagi.*
Hab. Susaki.

188. **Benzaitenia yenoshimensis** YENDO, Some New Alg. fr. Japan (Nyt Mag. f. Naturvid., 1913), p. 283, pl. XIV, f. 1–12.
Japanese name. *Bentenmo.*
Hab. Susaki.

RHODOMELACEAE

189. **Laurencia intermedia** YAMADA, Notes on Laurencia (Univ. Calif. Publ., Bot., Vol. 16, n. 7, 1931), p. 191, pl. 1, f. c, pl. 2.
Japanese name. *Kuro-sozo.*

Hab. Susaki.

190. **L. undulata** YAMADA, Notes on Laur. (l. c.) p. 243, pl. 29, f. a; Text-fig. T.
Japanese name. *Kobu-sozo.*
Hab. Susaki.

191. **Chondria crassicaulis** HARVEY, Alg. Wright (Proceed. Am. Acad. 1859, Vol. IV), p. 329; OKAM., Icon., I, p. 12, pl. 2, f. 1–15.
Japanese name. *Yuna.*
Hab. Susaki.

192. **Chondria lancifolia** OKAMURA, Icon., vol. VII, 1934, p. 43, pl. 323, fig. 1–10.
Japanese name. *Sasaba-yanaginori.*
Hab. Susaki.

193. **Polysiphonia crassa** OKAMURA, Icon., VI, 1929, p. 6, pl. 254.
Japanese name. *Futo-itogusa.*
Hab. Susaki.

194. **P. fragilis** SURINGAR, Alg. Jap. Mus. Bot., 1870, p. 37, t. 25, B; OKAM., Icon., VI, p. 7, pl. 255.
Japanese name. *Kuro-itogusa.*
Hab. Sotoura (Prov. Idzu).

195. **P. japonica** HARVEY, Narrat. Exped. Amer. Squad., Vol. II, p. 331.
Japanese name. *Kiburi-itogusa.*
Hab. Susaki.

196. **Roschera glomerata** (C. AGARDH) WEBER VAN BOSSE, Percy Sladen Trust Exped., Rhodophyc. (Trans. Linn. Soc., London, XVI, 3, 1914), p. 289; OKAM., Icon., IV, p. 155, pl. 188, f. 5–10.
Japanese name. *Itokuzugusa.*
Hab. Susaki.

197. **Symphyocladia marchantioides** (HARVEY) FALKENBERG, Rhodom., 1901, p. 277, t. 2, f. 18–23, t. 4, f. 20–24; OKAM., Icon., II, p. 152, pl. 93.
Japanese name. *Kozanemo.*
Hab. Susaki.

198. **Leveillea jungermanniodes** (MARTENS et HERING) HARVEY Mar. Bot. West Austr., p. 539; FKBG., Rhodom., 1901, p. 392, t. 6, f. 1–13, t. 14, f. 18–27; OKAM., Icon., II, p. 148, pl. 92.
Japanese name. *Jabaranori.*
Hab. Susaki.

199. **Herposiphonia fissidentoides** (HOLMES) OKAMURA, Contr. Knowl. Mar. Alg. Japan, III, p. 10–11, pl. I, f. 9–11; Id. Illustr. Mar. Alg. Japan, I, p. 9, pl. IV.
Japanese name. *Hime-goke.*
Hab. Susaki.

200. **H. tenella** (AGARDH) NAEGELI, Polys. n. Herpos., t. VIII; AMBRONN in Bot. Zeitung, 1880, p. 197, t. IV, f. 9, 13–17; OKAM., Icon., VI, p. 23, pl. 264, f. 1–9.
Japanese name. *Kumonosu-himegoke.*
Hab. Susaki.

201. **Herpopteros zonaricola** OKAMURA, Icon., II, p. 13, pl. LV, 1909.
Japanese name. *Shinobu-gusa.*
Hab. Susaki.

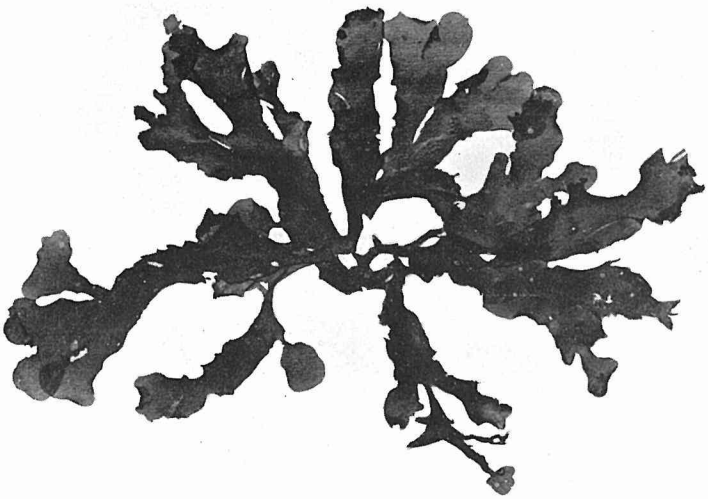
202. **Bostrychia tenella** (VAHL) J. AGARDH, Sp. Alg. II, p. 869; OKAM., Icon., I, p. 96, pl. 22, f. 1–13.
Japanese name. *Kokemodoki.*
Hab. Ohshima (Prov. Idzu).

PLATE XIX

PLATE 19

1. *Callymenia callophylloides* OKAMURA et SEGAWA sp. nov.
   The type specimen. ×1.

2. *Chondrus filiformis* OKAMURA et SEGAWA sp. nov.
   The type specimen. ×1.



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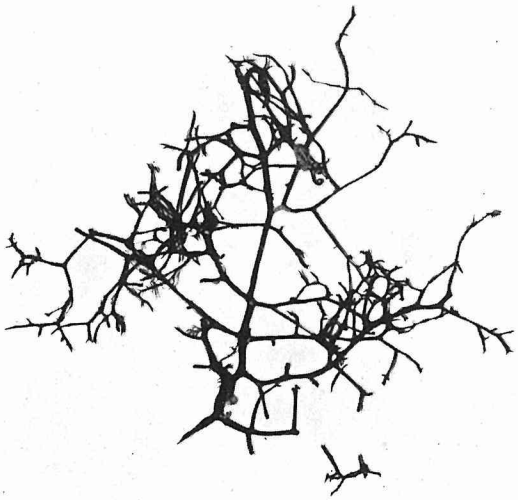

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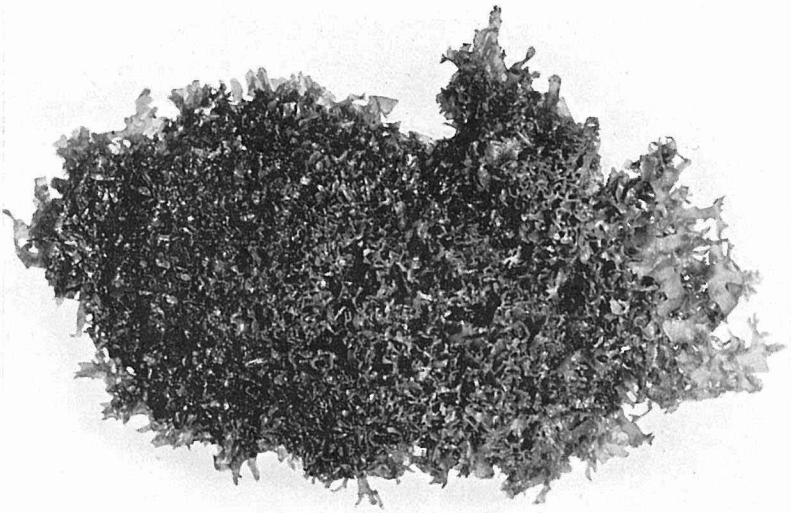
PLATE XX

PLATE 20

1. *Rhodymenia coacta* OKAMURA et SEGAWA sp. nov.
   The type specimen. × 2/3
2. *Fauchea spinulosa* OKAMURA et SEGAWA sp. nov.
   The type specimen. × 7/8



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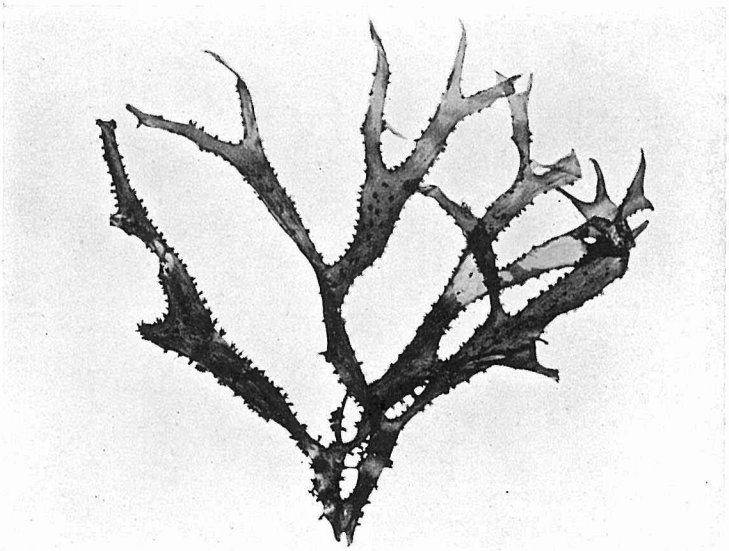

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