Notes on Algae new to Japan. VIII.

By

Kichisaburo Yendo.

Ralfsia verrucosa J. Ag.


(for other references and synonyms, see: De Toni, Syll. Alg., l.c.)

I have reported in this Notes the occurrence of Ralfsia deusta J. Ag. in the colder seas of Japan. Another species of Ralfsia was found at Hakodate on mussel shells and stones in the upper sublitoral region. Although no sporangia could be found in the specimens I have a least hesitation in identifying them with the present species. The crusts on mussel shells were thinner in substance and had smoother surfaces than those on stones:

Locality. Hakodate (!).

Distribution. Atlantic coast of Europe; Mediterranean Sea; Atlantic coast of North America; Alaska; Whidbey Island, Washington; California.

Galaxaura arborea Kjellm.

Floridé-slägtet Galaxaura, p. 72, Tab. 11, fig. 1–11, Tab. 20, fig. 39.

After repeated examinations of numerous specimens of Japane-

se Galaxaura, I have ascertained that this species occurs pretty common in our southern seas. In the structure of frond the plant is not particularly distinct from G. falcata Kjellm. In the general appearance of frond and the measurements of the segments both have their own peculiarities.

G. frutescens Kjellm. has been reported by Heydric from Loochoo, the specimen being now kept in the herbarium of the Botanical Museum of Berlin. This species has been known from Bahama Island only and nobody beside him has reported it from the Pacific. I have examined the specimen and suspected it to belong either to the present species or to G. falcata.

It is to be noted here, however, that some species give evidences of the ambiguity of the two groups Fruticulosae and Arborescentes proposed by Kjellman. The distinctions between G. tenera, G. frutescens and G. arborea are especially frequently puzzling. I am afraid Kjellman has to much multiplied the species of this form.

Locality. Goto Islands (!), Koshiki Islands (!), Satsuma Prov. (Dr. T. Inui). Botel Tobago (T. Kawakami, No. 28, T. Aoki, No. 17).

Distribution. Australia.

Galaxaura veprecula Kjellm.

Florida-slaget Galaxaura, p. 80, Tab. 16, fig. 17–33, Tab. 20, fig. 20.

? = Galaxaura angustifrons Kjellm.: l.c., Tab. 15, fig. 11–25, Tab. 20, fig. 27.


I identify a specimen from Botel Tobago with the present species. It has a close affinity with G. hysterix Kjellm. which is founded on a fragmentary specimen collected in Goto Island, Japan. The latter is diagnosed to have a papillose process on each of the epidermal cells, while the present has it only scatteredly. The other characters pointed out by the describer as

the distinctions between both species appear to me rather unreliable. As I have not yet seen any specimen which justifies the amalgamation of these two species into one, I have but to mention our specimen under *G. veprecula* Kjellm.

The papillose processes are frequently wanting in a series of the sections of frond. In this case, the specimen is apt to be identified with *G. angustifrons*. The latter is also founded on a single specimen from Bahia, collected in 1845. I am rather inclined to suspect if there might be a papillose part in its frond, the part unfortunately escaping Kjellman's sectioning knife. *G. veprecula* and *G. angustifrons* are almost inseparable in the external appearance as well as in the structure of frond, except that the latter has no papillose process on the epidermal cells. In some parts of frond of our specimen I found the epidermal layer entirely lacking of the processes, giving a reason to my doubt.

Heydrich reported *G. canaliculata* Kütz. from Formosa in the paper cited above. The specimen kept in the herbarium of the Botanical Museum of Berlin appears to me to be very likely identical with this.

**Locality.** Botel Tobago (G. Nakahara).

**Distribution.** Madagascar.

**Chondrus affinis** Harv.


(For other references, see: De Toni, l.c.).

The external appearance of the type specimens of the present species in Dublin shows a very wide range of variation. Some sterile forms may be taken as *Chondrus punctatus* Sur., and some narrow-segmented, less branching tetrasporic forms, as *C. ocellatus* Holm. It is very likely that this species has been passing under these names among the Japanese botanists. As
far as I could ascertain, it is confined to the colder parts of Japan while the other two species are distributed in the warmer. HEYDRICH reported the present species from the east coast of Formosa. The specimen kept in the herbarium of the Botanical Museum of Berlin is cystocarpic, and appears to me to be a narrow form of *C. ocellatus* HOLM.

**Locality.** Otaru (!); Hakodate (!); Muroran (!); Asamushi (ROSENBAUM), Tappi (ROSENBAUM), Horozuki (ROSENBAUM), Mutsu Prov.; Oga, Ugo Prov. (Y. Kudo); Sado Island (T. Obara, No. 19).

**Distribution.** California.

**Plocamium costatum** H. et H.?


(for other references and synonyms, see: *De Toni*, l.c.).

Among the species of *Plocamium* hitherto known, there are three species which have the definite branches simple and serrated viz., *P. Preissianum* SOND., *P. concinnum* ARESCH and *P. costatum* H. et H. The former two have two indefinite branches in each internode and the last, only one. The specimen received agrees with the present in this respect as well as in other characters. It is sterile and has narrower segments than the typical form, resembling in general aspect a broad form of *P. Telfairiae*. Hence, determination with query.

**Locality.** Botel Tobago (T. Aoki, No. 39).

**Distribution.** Australia; Tasmania; New Zealand.

**Nitophyllum ciliolatum** HARV.


=*Aglaophyllum ciliolatum* KUTZ.: Tab. Phyc., XIX, Taf. 7.

The species has been doubted by former writers if it might have been a mere variety or form of *N. uncinatum* J. Ag. For a fuller account concerning this point, cfr. GRUNOW, l.c. Our specimen also exhibits many characters to endorse the view.
Still, as there has been no linking form between them reported to us, I choose to mention the present species as a valid.

Locality. Oma, Mutsu Prov. (Rosenbaum).

Distribution. Western Australia; New Zealand.

**Nitophyllum monanthos J. Ag.**


= Nitophylla corallinarum Nott.: Nitophylla of Cal., p. 24, Pl. III, fig. 10.

A peculiar form of Nitophyllum has been known among us to occur on various parts of Japan. The plant is found epiphytic on Amphiroa, Corallina, Symphyocladia, Gelidium, or other flabellate algae. The principal part of frond is prostrate on the host, frequently extending on or enveloping a larger portion of the latter. The terminal segments of frond are generally free and often erect, and divided in various ways. The frond gets hold to the host by means of minute rhizoidal processes issued from the under surface. In the free segments these processes are also richly found. Cross sections of the middle part of frond show five layers of cuboidal cells, the middle one being composed of colourless large cells and the two on both sides, of chromoplast-containing smaller ones. A surface view of frond shows microscopic nerves running through the elongate, angulate, epidermal cells. Sori are found as roundish patches on small ovate seg-
ments on the margins or on the terminal segments of frond. In some specimens, they are found on small semicircular extensions from the frond margins and not seldom simply marginal and elongated in some upper segments. The external appearance of frond varies very much. This is due to the number and size of the free segments and especially in their manner of ramification.

After close examinations of the authentic specimens of *Nitophyllum* which point to our plant I have determined to identify ours, though with some doubts, with *N. monanthos* J. Ag. The type specimen of the species at Lund are but few in number and at all events can show only a part of variation of the forms.

*N. minus* Harv. should be undoubtedly combined with the present. Sonder's cotype in the Agardhian Herbarium can hardly be separated from the type of this species. The plant illustrated by Kützing in Tab. Phyc. XVI, Taf. 26 under *N. minor* Sond. shows a form with the free terminal segments amply developed.

A specimen of the present plant collected by Mr. Tanaka at Hakodate, is found in the herbarium of the Trinity College, Dublin, determined by Grunow as *N. deformatum* Suhr var *japonicum* Grun. An exactly similar specimen is found in the herbarium of the Botanical Museum of Berlin determined also by Grunow as *N. acrospermum* J. Ag. var. *japonicum* Grun. As far as the Original specimen of *N. monanthos* J. Ag. and *N. acrospermum* J. Ag. show, the two species appear to have been well defined. But judging from my specimens both appear to be linked by numerous intermediate forms. *N. tongatensis* Grun. might also very likely be regarded as a variation of either. But at present I can not be bold enough as to combine them into one species. The flabellate forms with broader linear segments composed of three layers of cells shall be separated from *N. monanthos* and be placed under *N. acrospermum* J. Ag.

Still one more specimen of our plant, collected at Hiogo, Japan is found in the Botanical Museum of Upsala, determined by Kjellman as *N. marginatum*. It has, however, nothing to
do with the plant described by J. Agardh in the same specific name.

The plant described by Nott from the Californian material under *N. corallinarum* should be very likely one and the same species with ours. As Nott's description of the species is rather incomplete, no account on the structure of frond being given, I reserve the final decision for future.

Locality. Bōshū Prov. (!); Hiogo (Kjellman); Gotō Islands (!); Koshiki Islands (!); Hidaka Prov. (!); Hakodate (!); (Y. Tanaka); Todohokke (Rosenbaum); Shimofuro (Rosenbaum); Tappi (Rosenbaum); Takashima (!); Yangeshiri Islands (!); Rishiri Island (!).

Distribution. Australia; California?

**Dasya elongata** Sond.


(for other references, see: De Toni, l.c.)

In Algae Novara, p. 91, Grunow has noted a difficulty of distinguishing the three species, *Dasya collabens* H. et H., *D. frutescens* Harv. and *D. elongata* Sond. from one another. The specimens of these species in the Agardhian Herbarium are indeed inseparable in the external appearances, more so as *D. elongata* Sond is represented by various forms. Taking Harvey's Australian Algae No. 202, as a reliable representative of the species, I find Kützing's Tab. Phyc., XIV, Taf. 66, fig. a-c, satisfactorily agreeing with it. It may be distinguished from *D. frutescens* Harv. by having the ramelli widely furcated, robust, and not attenuating at the apices; and from *D. collabens* H. et H. by the "ocellated" apices of the branchlets.

Locality. Nou (Nou Fish. School, No 10), Kashiwazaki (M. Nakamura, Nos. 156, 160), Echigo Prov.

Distribution. Australia.
Dasya collabens H. et H.


(For other references, see: De Toni, l.c.).

I identify several specimens of Dasya from the Japan Sea coast with the present species, after comparing them its authentic specimens. On the specimen sheet of the co-type from the Banks Peninsula, New Zealand, kept in the Agardhian Herbarium, there is found Harvey's handwriting which reads:—“The figure in Ner. Austr. shows only a scrap of a young and imperfect frond.” With this co-type some of our specimens agree especially well.

Our specimens may be at the same time referred to D. elongata with a little excuse. The same thing has already been experienced by Grunow.1) The present species, however, has the ramelli much denser and softer; the branchlets are not like “fox-tail” and not “ocellated”.

The stichidia are found in our specimens at lower parts of the ramelli, each taking a position of a ramellum. They are elongated conical with one or two short pedicells. Very frequently I saw the stichidia with some pericentral cells around the pedicells, as to exhibit the character of Eupogonium Kütz.

Dasya collabens H. et H. has been reported by Cotton2) from Corea. His specimens, however, differ from the original in several points and Cotton himself has verbally admitted the determination as erroneous.


Distribution. New Zealand; Australia.

Dasya punicea Meneg.


(For Synonymes and other references, see: De Toni, l.c.).

1) GRUNOW : Algæ Novara, p. 91.
This Mediterranean species stands close by the Australian species *Dasya hapalathrix* Harv. Both are hardly separable by the descriptions only. The pinnate ramification of *D. hapalathrix* illustrated by Harvey in Phyc. Austr., Pl. 88 is shown too regular than the original specimen actually reveals. The essential point to separate the two appears to me to lie on the spinulat-ed or naked principal stems.

Locality. Otaru Bay (!).

Distribution. Mediterranean Sea.

Polysiphonia macrocarpa Harv.


The specimens at my disposal are rather small, measuring but 10–15 mm in height, and are all tetrasporic. Examining the plant and referring to the description I could not do otherwise than to bring them to *P. sertularioides* J. Ag., under which various species have been synonymized. A comparison of ours with the authentic specimens of the latter I found to agree exactly in every respect with a specimen sent from Cotton under *P. macrocarpa* Harv. Cotypes of *P. acanthophora* Kütz. and *P. grisea* Kütz., which are also regarded to be nothing but *P. sertularioides* J. Ag., show various characters divergent from them. I choose, therefore, to take J. Agardh’s species in the narrow sense and to follow Cotton who prefers to count the species as valid after Batter’s view.

The prostrate part of frond consists of thick-walled, cuboidal cells, i.e., with the articuli about half as short as diameter. The erect filaments consist of the articuli, except in the basal part, of 2–4 times as long as the diameter and the stichidial branches have the articuli nearly as thick as diameter. There are very few branches, ascending and elongated, which may be stichidiferous in the upper portions. Short spinous ramulets are frequently met with in the middle parts of the principal filaments.

Locality. Shiriya Cape, Mutsu Prov. (Rosenbaum).

Polysiphonia fibrata Harv.


(For other references and synonyms, see: De/Toni, l.c.).

It was after a long and puzzling study of numerous authentic specimens of Polysiphonia that I have decided to identify our specimens with the present species. If we meet such an Urceolata form of Polysiphonia as this on the Atlantic or on the Mediterranean coast we shall have nothing to hesitate in identifying it to this species. The forms from our seas should never be treated with such preapprehension.

The present species is almost impossible to determine with certainty when sterile. Kny gives a minute account on the morphology of the plant and points out the distinctions between it and P. fibrillosa, P. Brodiae, P. sertularioides, etc. A sterile specimen of this, however, may also be referred to the descriptions of various species with some excuse, such as P. pulvinata J. Ag., P. havanensis Mont., P. acanthophora Kütz., P. deusta J. Ag., P. rhunensis Thur., P. breviarticulata Zanard., and the next-mentioned species P. ferulacea Suhr. Sharp distinctions between these species, if all valid, are only possible when they are either cystocarpic or tetrasporiferous. Even in the latter case, P. fibrata Harv. is often difficult to distinguish from P. ferulacea Suhr. I take by the former species a Polysiphonia of the Urceolata type with the articuli in the middle parts of frond longer than 1½ times of diameter and with globular or orange-shaped cystocarps, or tetrasporangia unilaterally disposed in the “distorted” stichidium. A further remark will be given under the heading of the next species.

An authentic specimen of P. acanthophora Kütz. in my possession agrees quite well with those which I here refer to this species. But J. Agardh has synonymized Kützing's under his P. sertularioides. Referring to the illustration of the plant in Tab. Phyc. XIII, Taf. 76, the reduction done by J. Agardh seems to me to have been based on a good ground. The
specimens distributed by Kützing under the species might have been not uniform.

Locality. Rebun Island (!), Rishiri Island (!), Kitami Prov.; Oshoro, Shiribeshi Prov. (!); Fukuyama (Rosenbaum), Hakodate (!), Shiokubi (S. Narita, No. Y. 7), Todohekke (Rosenbaum), Oshima Prov.; Oma (!), Shiriya (Rosenbaum), Mutsu Prov.; Oga, Ugo Prov. (S. Narita, No. a); Kashiwazaki, Echigo Prov. (M. Nakamura, Nos. 149, 150); Muroran, Iburi Prov. (!); Hidaka Prov. (!); Oushima (!), Kinkwasan Island (Herb. Imper. Mus., No. 134), Rikuzen Prov.

Distribution. Atlantic coast of England and France; Mediterranean Sea.

**Polysiphonia ferulacea** Suhr.

(Ousima specimen only).

This species has been described by J. Agardh based on a specimen sent to him from Suhr under the manuscript name. He disposes the species among the group with “Keramiidium urceolatis” (l.c., p. 911). The illustration of the plant under *P. breviarticulata* in Ner. Bor. Amer. II, Pl. XVI, B, 3, clearly shows the cystocarp of an ovate shape, and the describer himself defines the species “Keramiidium globoso-ovatis sessilibus.” The type specimen of *P. breviarticulata* Harv. and *P. ferulacea* Suhr agree with the definition on this point.

As already noted under the preceding species, the present is not easily separable from it. The reliable distinctions between them, as far as the diagnoses show, are that the former has the tetrasporangia spirally disposed on the stichidia while the latter has them unilaterally on the “distorted” ones; and that the former has the articuli “omnibus diametro brevioribus aut subaequalibus” while the latter has them “primariis mediis 4–5 plo., ramorum duplo-longioribus.” While examining numerous specimens of plants which point to these species I have repeatedly
met with the stichidia of an intermediate character. The length
of the articuli was also greatly variable, sometimes as long as
6–8 times of diameter as Harvey noted, but frequently as short
as only 1⅓ times. In many specimens which have the articuli
of the main filaments hardly twice as long as diameter, I have
seen evidently unilateral disposition of the tetrasporangia. The
distinction between the two species is not so clear as it appears.

I have referred to this species those specimens which have
the articuli shorter than 1½ times of diameter in any part of
frond and which have the tetrasporangia spirally disposed in a
stichidium. As far as our specimens show, the present species
appear to be located in the warmer seas while *P. fibrata* Harv.,
in the colder. In an intermediate region a linking form between
both species may be met with. I am strongly tempted to believe
that the one species should be taken as a form of the other.

Harvey described the plant from Key West, Florida, under
*P. breviarticulata*. He also described *P. Gorgoniae* from the
same locality. The latter species is remarked to be solitary,
but "rarely somewhat tufted", and the articuli in the minor
branches twice as long as diameter. In Herb. Trinity College,
Dublin, there is a specimen collected by Charles Wright in
Loochoo and determined by Harvey as *P. Gorgoniae*. On the
specimen sheet there is a sketch by Harvey showing a cystocarp
and tetragonal cross section of a filament. The cystocarp is
shown as orange-shaped and short-pedicelled. The Japanese
specimens which I now identify with *P. ferulacea* Suhr have
the cystocarps frequently orange-shaped. The Loochoo specimen
in Dublin has some of them orange-shaped as observed by
Hervey, but no less number of globular or globose-ovate ones
are found on it.

As *P. Gorgoniae* is described to grow solitary or rarely
somewhat tufted, the reliable distinction between *P. Gorgoniae*
Harv. and *P. ferulacea* Suhr will be simply in the length of
articuli of the minor branches. I dare not say the identity of
both species. But at least the Loochoo specimen under *P.
Gorgoniae* appears to me to be comparable with the present
species.
April 1918.]

**YENDO:--NOTES ON ALGÆ NEW TO JAPAN. VIII.**

Collins states a doubt if *P. ferulacea* Suhr might be the same as *P. havanensis* var. Binneyi J. Ag. J. Agardh has also remarked a close affinity between them.

During the study of the original specimens in the Agardhian Herbarium it happened very frequently to think in my mind that if the eminent algologist has not been inclined to separate one and the same plant into different species on account of its greatly distant localities—intermediate localities being unknown to him. The present species is one of the examples.


**Distribution.** Atlantic coast of Mexico; Guadeloup Island; Australia; Noukahiva Island; Sandwich Islands; Batan Islands (T. Aoki, No. 9).

**Lophocladia Lallemandii** Schm.


(For synonyms and other references, see: De Toni, l.c.).

The three species of *Lophocladia* resemble one another so that to distinguish them by mere descriptions is a difficult matter. The difference in the initiating modes of the lateral branches between *L. trichoclados* and *L. Harveyi*, pointed out by Schmitz is the essential hit mark. Falkenberg observes in *L. Lallemandii* that „Die untersten Segmente des Kurztriebes (ramelli) bleiben stets ohne seitliche Glieder, und ebenso bleibt der obere Abschnitt unverzweigt“ while in *L. trichoclados* „Ihr unterstes und meist auch das folgende Segment ist unverzweigt.“ This observation, however, does not agree with the illustrations given by Kützing in Tab. Phyc., XIV, Taf. 71 for *L. Lallemandi* and *L. Harveyi*, and in Tab. Phyc., Taf. 22, fig. a–b, and Tab. Phyc., XIII, Taf. 75, fig. a–c for *L. trichoclados*.

3) Schmitz: l.c., p. 223, foot-note.
4) Falkenberg: l.c., p. 552.
After comparing the specimens of *L. Lallemandi* and *L. trichoclados* in the Agardhian Herbarium I have noticed it almost safe to state that the former has the terminal parts of the indefinite branches "ocellated" while the latter not. Our specimen agrees in this point and in other characters with the former.

The distinction between *L. Lallemandi* and *L. Harveyi* is not very clear to me. Kützing seems to have separated the latter from the former essentially on account of their widely aparted localities. I have not seen Kützing's original. The discovery of the present species on our coast will weaken the ground of separating them.

*Locality.* Satsuma Prov. (Dr. T. Inui).

*Distribution.* Red Sea; ?Western Australia.

**Pterosiphonia parasitica** Fkbg.

Rhodomeaceen, p. 265, Taf. II, Fig. 3-9.—De Toni: Syll. Alg. IV, p. 999.

(For synonyms, see: De Toni, i.e.)

The specimen received for determination agrees in many respects with the mentioned species that I can not regard it specifically distinct from it. It is membranaceous in texture and some of the basal pinnae are complanated and broadened with congenial pinnules. The upright shoots have the lower pinnae decompoundly ramified so that the general outline of a shoot often assumes a broad rhombic shape. Falkenberg remarks, i.e., on the two different forms of the plant on the European coasts. As I have only a single, small specimen at my disposal I am not able to ascertain to which of the two forms ours has more likeness, and whether there are also such variations with ours.

*Locality.* Nou, Echigo Prov. (Nou Fisheries School, No. 34).

*Distribution.* West coast of Europe; Mediterranean Sea.

1) Schmitz: i.e.
Ceramium secundatum Lyngb.


= Ceramium rubrum f. prolifera subf. secundata FosL.: Norw. Forms of Ceram., p. 15, Pl. 3, fig. 5.

Petersen regards the species as to represent a mere form of C. rubrum due to the condition of the place where it grows, principally to the shallow water and strong current. I have not reasonable ground to propose anything against his view. Yet as far as C. rubrum Ag. is defined to have the articuli gradually long towards the lower part of frond, this form can be distinctly separated from it.

Locality. Shōbūta (Dr. A. Yasuda), Takayama (Miss Wainwright), Matsu-shima (R. Tsuge, No. 25), Rikuzen Prov.; Nou, Echigo Prov. (Nou Fisheries School, No. 13).

Distribution. Newfoundland; Iceland; Faeröes; West coast of Sweden.

Ceramium rubrum Ag. f. fasciculatum J. Ag.


I identify our specimens with the mentioned forma after consulting Petersen’s work cited above. The plant is characterized by having regularly corymbose-fasciculate branchlets which are terminated with markedly forcipitated apices. In most specimens there is always a small proliferating ramulet at each axil of upper branches. Plate IV, fig. 23 in Petersen’s work shows this character pretty well. Some specimens, how-
ever, have the proliferating branchlets poorly developed and even entirely absent. On this character there is nothing stated by the former writers.

Petersen states that the present forma "is perhaps rather to be considered as a species; at all events it is nearer to be a species than the other." I agree with him on this view. This forma is sharply limited from the other numerous formae by the peculiar mode of ramification. Foslie, l.c., observes a transition form between this and f. corymbifera, and also some, between this and f. genuina.

It is interesting to note that this forma is very common in the colder waters about Japan but hitherto never found on the coasts washed by the Black Current.

C. involutum Kütz., judging from the figures in Tab. Phyc., l.c., appears to me to be identical with this forma. Kützing's plant is not described to have the proliferating branchlets.

Locality. Rishiri Island, Kitami Prov. (!); Oshoro by the Otaru Bay (!); Kominato, Mutsu Prov. (T. Tomomichi); Muroran (!); Kushiro (T. Kawakami); Nemuro (!); Rubetsu, Etorofū Island (!); Motoyoshi (!), Daito Cape (!), Shōbuta (Dr. A. Yasuda), Rikuzen Prov.; Chōsen, Corea (N. Takahashi).

f. corymbifera J. Ag.


?= Ceramium irregulare Kütz.: Tab. Phyc., XIII, Taf. 10, fig. II.

This form stands close by the preceding from which, however, it may be distinguished by having less forcipated apices. Tetrasporangia are richly found in the upper ramulets, arranged in much disturbed rings around the genicula. The tetrasporic form has a peculiarity in the mode of ramification. The upper principal branches ramify in one plane in a decompound-paniculate manner, the general outline assuming an ovate Shape. The proliferating ramules are very few in number. Some of the tetrasporic specimens with abbreviated ramules
coincide with the illustration of *C. irregulare* Kütz. in Tab. Phyc., XIII, l.c.

Locality. Cape Inuboi(!).
Distribution. West coast of Europe.

**Grateloupia dichotoma** J. Ag.?


(For Synonymes and other references, see: De Toni, l.c.).

The present species is represented in the Agardhian Herbarium by many specimens of diverse appearances. Our specimens agree with some of them. Such forms as illustrated in Kützing's Tab. Phyc., XVII, Taf. 28, fig. c–e, and VII, Taf. 27, fig. c–d, are not found in our collections.

A dwarfed form of *Nemastoma livida* Harv., which itself is one of the problematic species of Japan, is almost inseparable from the present. The determination is hence with certain amount of doubt.

Locality. Hakodate(!); Tappi (Rosenbaum), Asamushi (Rosenbaum), Shimofuro(!), Mutsu Prov.

Distribution. Mediterranean Sea; Black Sea; Tingin; Bovisund, England; Brest, France; West Indies?

Sapporo, Feb. 21, 1918.