植物學雜誌第二十七卷

第三百十六號

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○髮菜ニ就テ

岡村金太郎

Okamura, K. :—On Chinese edible *Nostoc* (Fahsai) identified by Prof. Seitchell as *Nostoc commune* var. *flagelliforme*.

遠藤吉三郎君ガ一昨年(明治四十四年)十二月渡歐ノ途次上海香港廣東地方ヲ漫遊セラレタル記事ハ掲ゲテ本誌第二十六卷第三百三號第七十二頁ニ海藻ノ漢名ニ就テト云ヘル文中ニ詳ナリ、中ニ髮菜ニ就テ詳細敘述セラレタル中ニ「從來寡聞ニシテ之ニ似タル藻類アルヲ聞カズ」ト記サレタリ、予ハ幸ニ農商務省水產局員某氏ヨリ明治三十年頃此藻ノ標本ヲ得之ヲ檢鏡シテ *Nostoc* ノ一種ナリトハ知リタレドモ其果シテ何種ニ屬スルヤヲ詳ニセズ且 *Nostoc* トシテハ形態普通一般ノ *Nostoc* 類ト甚シク異ナリ其屬ノ種類ハ多クハ不規則ナル團塊ヲナスニ拘ハラズ髮菜ハ其名ノ如ク黑色纖細ニシテ婦人ノ毛髮ノ如クナルヲ以テ果シテ *Nostoc* トスベキカ又ハ別ニ新ナル屬ヲ爲セルモノナルカ或ハ若シ *Nostoc* ノ中ニ入ル、トスルモ新ナル Section 或ハ Subgenus ト云ヘル如キモノヲ設ケザルベカラザルカラ疑ヒ敢テ之ヲ發表スルニ至ラズシテ止ミス、爾來此ニ關シテ注意ヲ怠ラザリシガ Engler und Prantl's Natürl. Pflanzenfamilien ノ Cyanophyceae ノ部出版セラレタルヲ以テ *Nostoc* ノ屬中ニ之ニ類スルモノヲ索メタレドモ夫カト思フモノモナク皆團塊狀ヲナスモノ、ミノ如ク見ラレタリ、此ニ於テ遂ニ之ヲ *Nostoc* ノ一新種トシ *flagelliforme* ト云ヘル新ナル Section ヲ設ケテ其記載ト圖トヲ認メ將ニ之ヲ發表セントシタリ、下ニ掲グル英文即チ是ナリ、然ルニ偶々水產講習所助教東道太郎氏神保町ノ書店ニ於テ明治四十四年三月二十六日出版臺灣總督府殖產局發行支那食

料植物ト云ヘル小冊子ヲ求メタルニ中ニ髮菜ノ記事アリテ其學名ヲ *Nostoc commune flagelliforme* トシ米國ノ海藻學者 SETCHELL 氏ノ査定シタル所ナル由記シアルコトヲ予ニ語ラレタリ因テ其書ヲ一見スルニ活字ノ誤植モ多ク其出典モ記サレザルヲ以テ果シテ SETCHELL 氏ガ何ニ依テ斯ル學名ヲ附シタルカヲ信用スルニ少シク物足ラヌ感アリタリ然ルニ緒言ニ此小冊子ハ臺灣總督府民政局ニ於テ同技師川上瀧彌氏ニ命ジテ譯サシメタル由ノ記事アルニ因リ書ヲ川上氏ニ送り此記事ノ出タル文獻ヲ問合セタリ、氏ハ即チ氏ノ拔萃ヲ送ラレタルヲ以テ茲ニ其出典等ノ明ナルヲ得タルハ深ク氏ニ謝スル所ナリ、其全文及出典ハ下ノ如シ

A Description of some Chinese vegetable food materials and their nutritive and economic value. By WALTER C. Blasdale, Instructor in Chemistry, University of California (Bulletin No. 68, U. S. Department of Agriculture 1899) P. 46—47.

"*Nostoc commune flagelliforme*.—Of the algae, one form which occurs in black tangled masses resembling horse hair is largely used by the Chinese. This was identified by Prof. W. A. SETCHELL as *Nostoc commune flagelliforme*. It is designated by the characters 髮菜. The use of this plant as an article of food does not seem heretofore reported. Treated with boiling water, it forms a gelatinous mass, and is used as a thickening medium for various culinary preparations, one of this vegetable with dried shrimps. The analysis shows a high percentage of protein, but only insignificant amounts of other food constituents, &c &c." (略シタル部分ハ他ノ藻類、主トシテ *Porphyra* ノ諸種ヲ記シ最後ニ此等植物ノ分析表ヲ示ス即チ

Water
Protein
Albuminoids
Amids (bef difference)
Fat
Starch
Cane sugar
Reducing sugars
Crude fiber
Ash
undetermined

Nostoc commune

flagelliforme:

Original material	10.58	20.93	—	—	1.19	—	.00	.00	4.07	7.50	—
Water free-substance	—	23.41	—	—	1.33	—	—	—	4.55	8.39	—

Porphyra laciniata

Original material	21.85	25.70	—	—	.17	—	—	—	14.60	—	—
Water free-substance,	—	32.88	—	—	.22	—	—	—	18.68	—	—

以上ノ記載ニ依リテ髮菜ヲ *Nostoc commune flagelliforme* ニ當テタル學者ノ SETCHELL 氏ナルコトモ確メラレ茲ニ多年ノ疑ヲ氷解スルニ到レリ

今 De Toni 氏 Sylloge Algarum Vol. V, P. 408 ニ掲ゲタル *Nostoc commune* Var. *flagelliforme* (Berk. et Cart.) BORN. et FLAH. ノ性質ヲ記セバ下ノ如シ:—體ハ絲狀ニシテ約 3—4 mm ノ高サヲ有シ、硬シ、念珠狀細胞列ハ並行シテ存ス、佛國ビレチース地方ノ乾キタル場所ニ在リ、ボヘミヤ、亞米利加ニテハ San Pedro, Texas; 亞弗利加ハ南方ニテ Smithfield, Orange ニ在リ、又支那ニモ産ス、數ニ在リ、*Nostoc commune* VAUCH. ノ食用種ナルコトハ既ニ Montagne 及 Lagerheim 氏ノ報ジタル所ナリトアリ、

Nostoc commune ハ極メテ普通ノ種ノ如ク弘ク各地ニ存スルモノ、如クナレバ我邦ニモ必之アラン、彼ノ東京附近ニ於テ常ニ人ノ立入ラザル寺社地等ニ雨後忽然トシテ *Nostoc* ノ軟塊アルハ人ノ知ル所ナレドモ此種ノ何ナリヤハ予未ダ之ヲ詳ニセズ、上記 *Nostoc commune* Var. *flagelliforme* モ亦可ナリ各地ニ普キモノ、如ク其支邦ニ産スルコトモ De Toni 氏ノ書ニ載スル所ナルモ其大サハ 3—4 mm ノ高サトアリ (LEMERMAN'S Algen (Kryptogamenflora der Mark Brandenburg III p. 170) = *Nost. commune* var. *flagelliforme* ノ長サヲ數 cm. トシ 3—4 mm 濶ニトシタレバ茲ニ De Toni 氏ガ 3—4 mm. elato トシタルハ濶ニト同シ意ニヤ又ハ誤ニヤ、又 Wolle Freshwater Algae of the U. S. 1887 P. 285 = *Nostoc flagelliformis* BURK. et CURT. トシテ長サ數インチ直徑半「ライン」トアリ兩書トモ

濕地上ニ生ズトアリ、又支那ニテハ前記 De Toni 氏ノ *Syloge Alg.* ニ ad frutices ナアリ予今之ヲ載ニ在リト譯シタレドモ果シテ當レルヤ否ヤヲ知ラズ、此記載及ビ體形ノ餘リニ小ナルヲ以テ予少シク此種ノ學名ニ就テ疑ナキ能ハザル所アリ、然レドモ既ニ SETCHELL 氏ノ査定シタルモノ濫ニ其當否ヲ爭フベキニアラザルヲ以テ茲ニハ唯予ノ研究シタル所ノミヲ記スニ止ム、其記事即チ左ノ如シ、

On Chinese edible *Nostoc* (*Fah-tsai*) identified by Prof. SETCHELL As *Nostoc commune* var.

flagelliforme.

Fronds filiform, forming black tangled mats, simple, bristle-like and fragile in dried state, but tenaceous and elastic in reimmersion, 226-510 μ thick; in some specimens filaments longitudinally split, or compressed and a little expanded attaining the breadth of 1.2 mm. in reimmersion. Cell-filaments running parallel longitudinally through the frond and curved in a longitudinal direction but not interwoven. Cells globular or somewhat oblong often disk-shaped by division, ca. 3.7 μ in diameter, with bluish-green contents. Heterocysts terminal or intercalary, globular or a little oblong, 5.7-6.4 μ thick. Sheath thickish and more or less distinct toward the periphery of the frond but not so toward the inside; thus, on the cross-section the demarkation of sheath of outer filaments is more distinct than those of the inner ones, and the external layer of frond is somewhat like the cortex in appearance showing yellowish brown colour.

Among our materials I have measured **the length of some pieces of frond in 16-19 cm. after reimmersion.**

Colour blackish in dried state, greenish-brown in reimmersion, and the plant does not adhere to paper in drying after reimmersion.

This *Nostoc* has been identified by Prof. SETCHELL as *Nostoc commune* var. *flagelliforme* (Waeter C. Blasdale's A Description of some Chinese vegetable food materials and their nutritive and economic value) (Bull. U. S. Dept

of Agriculture No. 68, 1899 P. 46-47.)

The above descriptions have been made from dried specimens of the plant and of the fresh state nothing is known to us. **The plant is said to grow on stones in a mountain rivulets in Shensi and Kansu Districts in China.** It is collected and sold in market as food there. Natives call it Fahtsai (髮菜).

Explanation of figures on p. 180.

Fig. 1 : filaments of *Nostoc commune* var. *flagelliforme* in nat. size.

Fig. 2 : one of filaments, $\frac{22}{1}$

Fig. 3-4: two pieces of fronds a little expanded; $\frac{5}{1}$

Fig. 5-6: cross-sections of fronds; $\frac{54}{1}$ and $\frac{56}{1}$ respectively.

Fig. 7 : portion of the cross-section of frond, $\frac{220}{1}$

Fig. 8 : part of Fig. 7 highly magnified, $\frac{820}{1}$

Fig. 9 : diagrammatic view of longitudinal section of frond showing cell-filaments running longitudinally; slightly magd.

Fig. 10: portion of the longitudinal section of frond, $\frac{380}{1}$

Fig. 11: two pieces of cell-filaments; $\frac{600}{1}$

Fig. 12: one of cell-filaments highly magnified, $\frac{1080}{1}$

矢部吉禎氏ヨリ福州領事上野專一編支那貿易物產字典(明治二十一年丸善發行)第百九十一頁ニ左ノ記事アリトテ通知セラレタレバ茲ニ附記シテ氏ノ好意ニ報ユ。

Moss

フアツツアイ
髮菜

ハシムツ
仙菜

髮菜ハ四川省ニ産スル一種ノ蘚苔ニシテ漢口ニ運來シ再之ヲ上海ニ輸送シ以テ食用ニ供ス百斤價銀五十兩トス千

八百八十五年漢口輸出三百五十担八十斤元價關銀八千四百十六兩。

遠藤博士ノ髮榮ノ記事ハ頗ル其漢名ヲ詳ニセリ依テ此處ニ引用ス即チ左ノ如シ「髮榮(Jalsay, Shanghai, Jahchoy Hon-sikou)ハ黑色細織ニシテ長サ一寸内外紛糾錯雜シテ如何ニモ婦人ノ梳キ落シタル毛髮ニ似タリ香港ニテハ之ニ發榮又ハ發財ナル文字ヲ普通ニ用キ小賣店等ニハ往々淨發財ノ文字ヲ掲グルヲ見タリ上海ニテハ髮榮ノ一點張ナリ香港廣東邊ニテハ發財ナル名稱ノ緣喜佳キヲ喜ビ祝日ニハ多ク之ヲ用ウ香港海味洋行ハ孰レモ天津ヨリ來ルト唱フレドモ上海商人ハ陝西省ノ產ナリト語レリ陝西省トハ中央支那ニシテ海岸ニ非ズ」

予ガ聞ク所ニ依ルモ此植物ハ陝西(シエンシ)及甘肅(カンスー)地方即チ古ノ蜀ノ地ノ山間ノ溪流ノ石上ニ生ズト。此藻ノ用法ニ就テハ前掲 BLASDALE 氏ノ文中ニ詳ニシテ之ニ沸湯ヲ注グバ膠質ノ塊トナリ之ヲ用キテ種々ナル食品ヲ作ルニ當テ之ヲ濃厚ナラシムルニ用キ其最モ珍重セルモノハ之ト乾海老トヲ料理スルニアリ之ガ分析ノ結果ハ頗ル多量ノ蛋白質物ヲ有スレドモ他ノ食物成分ノ量ハ著シカラズ。

以上予ノ知り得タル參考書類ニヨリテ此藻ニ關スル記事ヲ綴ルコト爾リ、玆ニ此研究ヲナスニ當リ學友諸氏ノ助力ヲ謝ス。

○柳ノ花粉ノ發芽ニ就キテ

野 原 茂 六

Nohara, S.—On the Germination of pollen of some *Salix*.

花粉ノ發芽力及之ヲ永ク保持スル方法ヲ知ルハ種子ニ於ケルト同ジク農業上殊ニ園藝上ニ於テ甚有益ナルコト言ヲ俟タズ、例ヘバ雌雄藥成熟ノ時期ヲ異ニスルトキ即「ディコガミー」ノ花ヲ以テカ又ハ遠隔ノ地ニ花粉ヲ求メテ雜種ヲ造ラントスルガ如キ時ニハ花粉保存法ヲ知ラザレバ忽少カラザル不便ヲ感ズルガ如シ、斯ル不便ハ育種 (Breeding)