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On the identity of *Fucus babingtonii* Harvey (Fucales, Phaeophyta)

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Examination of type materials of *Fucus babingtonii* Harvey shows that this entity is conspecific with the species now called *Pelvetia wrightii* Okamura (=*Fucus wrightii* Harvey nom. illeg.). Publication of the name *Pelvetia babingtonii* (Harvey) De Toni 1895 antedates that of *P. wrightii* Okamura 1902. Therefore, *P. babingtonii* is the correct name for this species. Specimens cited in the protologue of *F. babingtonii* collected at Shimoda, Japan and Hong Kong belong to the species now we call *Ishige okamurae* Yendo.

Key Index Words: *Fucales*—Fucus babingtonii—Fucus wrightii—*Nomenclature*—Pelvetia babingtonii—Pelvetia wrightii—*Phaeophyta*.

Harvey (1859) published a paper dealing with many new species of marine algae based on specimens collected chiefly by Charles Wright during the U.S. North Pacific Exploring Expedition of 1853–1856 under the command of Captain John Rodgers. The paper comprises only brief Latin descriptions not accompanied by illustrations, making it difficult for later phycologists to identify the new species. Nearly a century later, the manuscript of Harvey's complete report on the algae of that expedition, including colored illustrations, was discovered in the Farlow Herbarium (FH), showing that the published portion was merely an abstract. This manuscript, which was edited and published by Dawson (1959), clarifies many uncertainties presented by the abstract.

Among these new species were two that Harvey assigned to *Fucus* sect. *Fucodium* (J. Agardh) Harvey: *F. wrightii* and *F. babingtonii*. The former was said to come from the "Straits of Sanger [Tsugaru Straits], Japan", the latter from "Japan (Dr. Babington in Herb. T.C.D.); rocks at Simoda [Shimoda]; Hong Kong."

Fucodium is a name applied by J. Agardh (1848) to a collective genus that included *Pelvetia* Decaisne et Thuret (1845). De Toni (1895a, 1895b) restored the name *Pelvetia*, making appropriate combinations for species previously assigned to *Fucodium*. He included *F. babingtonii* in *Pelvetia*, but with a query. *Fucus wrightii*, however, was listed as a species of uncertain generic position, possibly referable to *Ascophyllum* (De Toni, 1895a, p. 209).

Okamura (1902) concluded that *Fucus wrightii* was properly placed in *Pelvetia* and made the appropriate combination. As pointed out by Yoshida (1977), however, *Fucus wrightii* Harvey is a later homonym of *F. wrightii* Turner (1811), a species now referred to *Gracilaria*, and hence is not priorable. The binomial *Pelvetia wrightii* must be attributed directly to Okamura and treated as a new name rather than a new combination in accordance with Art. 72 of the International Code of Botanical Nomenclature. This interpretation is important because it dates the species from 1902 rather than from 1859.

In his treatment of Japanese Fucaceae, Yendo (1907) came to the conclusion that *Fucus babingtonii* was conspecific with *P. wrightii* after examining photographs of original specimens provided by Prof. E. P. Wright, keeper of the herbarium at Trinity College, Dublin (TCD). He treated *F. babingtonii* as a form of

P. wrightii, coordinate with forma *typica* and forma *japonica* Yendo. The latter, which was first mentioned by Yendo (1905) as *P. japonica* without a description, was said to have a thinner and narrower frond than typical *P. wrightii* and to predominate in the northeastern part of the range of the species. Forma *babingtonii* was said to be intermediate between the other two forms in both morphology and geography. During his stay in Europe, Yendo visited Dublin in December 1913 and examined Harvey's collections, but the results of his observations were not published. Yendo's treatment of *Pelvetia* was adopted by Okamura (1936).

Because *Pelvetia babingtonii* (Harvey) De Toni dates from 1895 while *P. wrightii* Okamura dates from 1902, the former is the correct name for this species. With respect to Yendo's treatment, however, the question arises whether *P. wrightii* and *P. wrightii* forma *japonica* should be given nomenclatural recognition as forms of *P. babingtonii*. In view of the morphological variability exhibited by *Pelvetia* in Japan, it was necessary to re-examine the original specimens of *Fucus babingtonii* in order to determine the relationship between this species and *F. wrightii*.

The epithet *babingtonii* suggests that the Babington collection in Harvey's herbarium at TCD should be considered the type, and this suggestion is confirmed by the note in Harvey's manuscript (Dawson, 1959, p. 9), "Described from Dr. Babington's specimens." Unfortunately, TCD does not lend types, but its director, Dr. John Parnell, kindly sent a photograph of the type sheet (Fig. 1). There are two specimens, 25-30 cm high

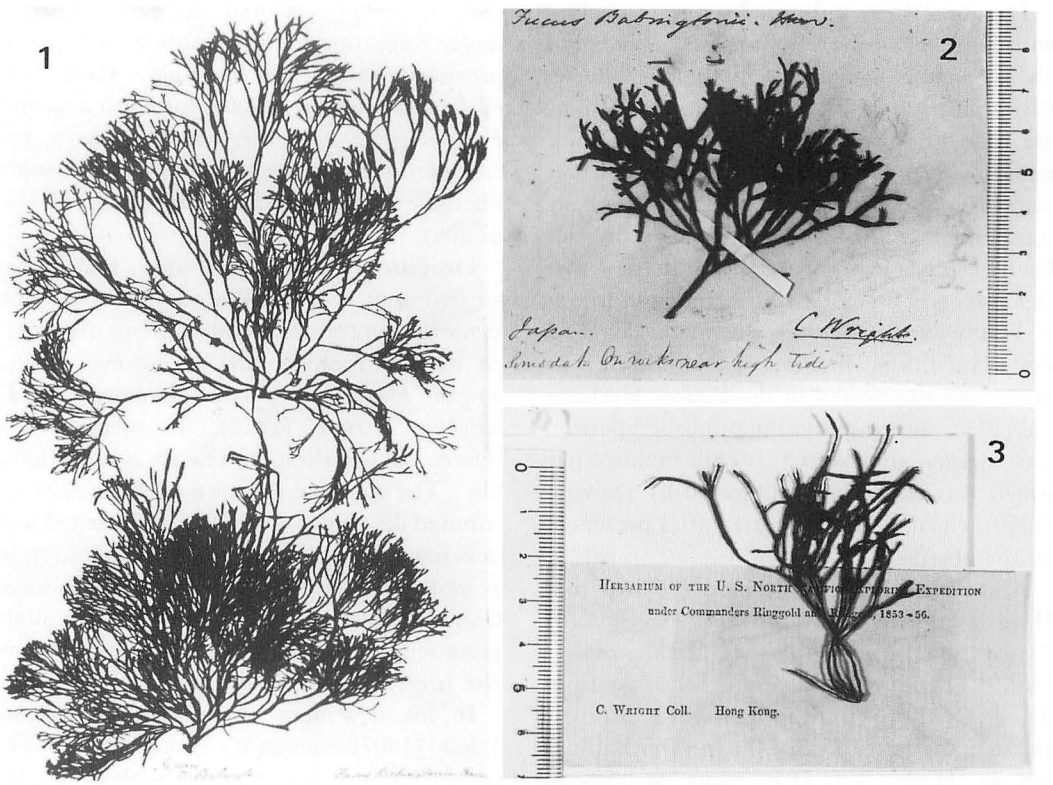

Fig. 1. Holotype sheet of *Fucus babingtonii* Harvey, collected by Dr. Babington in "Japan" (TCD). Upper specimen is herein designated lectoholotype.

Fig. 2. Specimen cited by Harvey, collected by Wright at Shimoda ('Simoda'), Shizuoka Prefecture, Japan, referable to *Ishige okamurae* Yendo.

Fig. 3. Specimen cited by Harvey, collected by Wright at Hong Kong, also referable to *I. okamurae*.

("10-12 inches long" according to Harvey's manuscript), frequently branched, the branches narrow and with a few vesicles. The locality is given only as "Japan". We can say that these two specimens, of which we designate the upper one as lectoholotype, are clearly referable to *P. wrightii*, although they are large immature plants with slender branches.

Dr. Parnell sent on loan a herbarium sheet consisting of three collections, all of which are referable to *Ishige okamurae* Yendo. The upper one, contained in a white envelope, was collected at Misaki, Kanagawa Prefecture, Japan by Yendo. It was sent to TCD by Yendo accompanied by a letter asking the curator to compare it with the type of *Fucus babingtonii*. The lower one (Fig. 2) is a specimen from Shimoda, about 7 cm high, bearing Yendo's annotation, "This is what I described as *Ishige okamurai*, Dec. 1913". The middle one (Fig. 3) was collected at Hong Kong and is smaller than the lower one. It may be noted no. 37 of Okamura's "Algae Japonicae Exsiccatae" (1899), distributed under the name *Pelvetia babingtonii*, is also representative of *I. okamurae*.

From an examination of Yendo's collections and field experience of one of us (TY) on the coast of Hokkaido, we conclude that the taxonomic recognition of three formae, as in Yendo's treatment, is not justified. Thallus size, vesicle characteristics, and receptacle morphology all vary in response to habitat and season of growth.

In summary:

Pelvetia babingtonii (Harvey) De Toni, Syll. Alg. **3:** 216. 1895; Mem. R. Ist. Veneta Sci. Lett. Arti **25:** 48. 1895. *P. wrightii* Okamura forma *babingtonii* (Harvey) Yendo, J. Coll. Sci., Imp. Univ. Tokyo **21**(12): 22. 1907.

Basionym: *Fucus* (*Fucodium*) *babingtonii* Harvey, Proc. Amer. Acad. Arts. **4:** 329. 1859.

Holotype: "Japan, Dr. Babington" in TCD; lectoholotype: upper specimen on holotype sheet.

Taxonomic synonym: *Fucus* (*Fucodium*) *wrightii* Harvey, Proc. Amer. Acad. Arts **4:** 329. 1859 (not *F. wrightii* Turner, Fuci **3:** 31. pl. 148. 1811).

Pelvetia wrightii Okamura, Nippon Sorui Meii 138. 1902.

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吉田忠生*・Paul C. Silva**：エゾイシゲの学名について

日本北部に産するエゾイシゲには *Fucus wrightii* Harvey に基づく *Pelvetia wrightii* Okamura 1902 の学名が用いられている。これまで Harvey が同時に発表した *Fucus babingtonii* については，その実体が不明であった。今回 Dublin の Trinity College に保存されているタイプ標本を調べて，*F. babingtonii* の記載の元になった標本は明らかにエゾイシゲであることが確認された。このため，*Pelvetia babingtonii* (Harvey) De Toni 1895 の名前のほうが Okamura よりも早く発表されているので，これを正しい名前として採用しなければならない。また，この種の産地として挙げられている下田，香港で Charles Wright が採集した標本はイシゲ *Ishige okamurae* Yendo であることも分かった。（*060 札幌市北区北10条西 8 丁目　北海道大学理学部植物学教室；**Herbarium, University of California, Berkeley, California 94720, U.S.A.）