

Lectotypification of two species of *Sebdenia* (J.Agardh) Berthold (*Sebdeniaceae*, *Florideophyceae*)

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When Berthold (1882: 530) proposed treating “*Halymenia* untergruppe *Sebdenia*” (J.Agardh 1876: 134, [Section] *Sebdenia*) as a genus, he included two species, *Sebdenia monardiana* (Montagne) Berthold (1882: 530) and a new species, *Sebdenia dichotoma* Berthold (1882: 530). J. Agardh (1876: 134) included three species in his Section *Sebdenia*, *Halymenia platycarpa* (Harvey ex Grunow) J.Agardh, *H. kallymenioides* Harvey, both from the Indian Ocean, and *H. monardiana* Montagne from the Mediterranean. *Sebdenia* (J.Agardh) Berthold was lectotypified by Schmitz (1889: 444) with *Sebdenia monardiana* (Montagne) Berthold (1882: 530).

Sebdenia monardiana was based upon *Halymenia monardiana* Montagne (1838: 275, “*Ad oras Africae borealis prope Juliam-Caesaream hanc algam gemini fratres DD. Monard, postea cl. Roussel rejectam legerunt*” [On the shores of northern Africa, near Julia-Caesarea, the twin brothers DD Monard, later colleague Roussel, collected this rejected alga]), showing that Montagne based his description on multiple specimens. Montagne further cited an unpublished name given by Roussel, *Halymenia mesenteriformis* Monard frat. ex Roussel, *nom. inval.* in synonymy.

Searching in PC, where the herbarium of Jean Pierre François Camille Montagne (1784–1866) is located, there are 13 specimens of *Halymenia monardiana* that may represent original material; other historical sheets were disregarded because they were incompatible with the protologue (later date, different place, or the lack of a link to the above-mentioned collectors). There are seven specimens mounted on five sheets [PC 0456750, PC 0574029, PC 0574030, PC 0574037, PC 0058986]; all of which were washed ashore in Algiers and collected by the brothers Monard in 1833. PC 0058991, named *H. monardiana* Montagne *ms. forma umbilicata et obtusiloba*, collected by Boivin, is also discussed by Montagne in the protologue. Apparently, none of the above mentioned is fertile. Seven other specimens mounted on 5 sheets [PC 0058988, PC 0058989, PC 0058990, PC 0456751, PC 0456752, PC 0456755, PC 0456756] were collected in Algiers between 1835 and 1837 and belong to Roussel’s herbarium, and all have Roussel’s handwriting and they bear the number 672 of Roussel’s catalogue of the Algerian algae (abbreviated either as 672 ex Cat. Alg., 672 ex Catal. Alger. or just 672). PC 0456755, PC 0456756 and PC 0058988 are fertile and have the handwritten notation “*cum fructibus*” [with fruit]. Furthermore, PC 0456756 and PC 0058988 are labelled *Halymenia mesenteriformis*, but only PC 0058988 (Fig. 1) was collected in November 1937. Considering all this, PC 0058988 is the best candidate for lectotypification.

Sebdenia monardiana (Montagne) Berthold 1884: 530

≡ *Halymenia monardiana* Montagne 1838: 275

Lectotype (here designated): PC 0058988 (Fig. 1).

Registration (of lectotype): <http://phycobank.org/107471>

Type locality: Algiers, Algeria (“*Hab. Ad oras Africae borealis prope Juliam-Caesaream...*”).

Buia & Groeben (1999: 11, fig. 2) reported that the supposed holotype of *Sebdenia dichotoma* Berthold was in the herbarium of the Stazione Zoologica Napoli at Ischia, Italy (SZN). However, this specimen can no longer be found. It seems that after being exhibited during the 2nd European

Phycological Congress (held at Montecatini Terme on 20–26 September 1999), sheet no. 001839 was lost or misfiled (M.C. Buia, pers. comm.). However, this herbarium sheet apparently lacked any reproductive annotations, whereas Berthold in his protologue (Berthold 1884: 21) refers to fertile specimens collected in August and September. Furthermore, when describing *Sebdenia* Berthold, Berthold (1882) separated it from *Halymenia* on the base of “the difference in structure and development of its cystocarp” (i.e. a lack of the so-called *ampullae*). At SZN, we found two herbarium sheets belonging to the original material of *S. dichotoma*: SZN 001841 is a tetrasporangial specimen collected in Santa Lucia in August 1880, while SZN 001842 is a cystocarpic specimen collected at Posillipo in August 1880 and is the best candidate for lectotypification. Notably, SZN 001840 is labelled as *Sebdenia dichotoma*, but it has Berthold’s annotation “*Halymenia dichotoma* J. Ag. cystocarpium” and, as mentioned above, Berthold separated the two genera based on reproductive characters. Therefore, specimen SZN 001840 should be considered an *Halymenia*, probably *Halymenia elongata* C.Agardh.

Sebdenia dichotoma Berthold, 1884: 21, pl. 2.

Lectotype (here designated): SZN 001842 (Fig. 2).

Registration (of lectotype): <http://phycobank.org/107472>

Type locality: Gulf of Naples, Italy.

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Agardh, J.G. (1876). *Species genera et ordines algarum*, seu descriptiones succinctae specierum, generum et ordinum, quibus algarum regnum constituitur. Volumen tertium: De Florideis curae posteriores. Epicrisis systematis Floridearum. pp. [ii*-iii*], [i]-[vii], [1]-724. Lipsiae [Leipzig]: apud T.O. Weigel.

Buia, M.C. & Groeben, C. (1999). Georg Funk (1886–1958) e la Stazione Zoologica di Napoli. in Abdelahad, N., Eds, *Il patrimonio algologico italiano*. Gruppo di Lavoro per l’Algologia della Società Botanica Italiana. Off. Graf. Borgia I.G.E.A., Roma

Berthold, G. (1882). Über die Vertheilung der Algen im Golf von Neapel nebst einem Verzeichnis der bisher daselbst beobachteten Arten. *Mittheilungen aus der Zoologischen Station zu Neapel* 3: 393–536, 3 pls.

Berthold, G. (1884). Die Cryptonemiaceen des Golfes von Neapel. *Fauna und Flora des Golfes von Neapel* 12: 1–127

Montagne, C. (1838). Cryptogames algériennes, ou plantes cellulaires recueillies par M. Roussel aux environs d’Alger, et publiées Par le Docteur Camille Montagne. *Annales des Sciences Naturelles, Botanique, série 2* 10: 268–279.

Schmitz, F. (1889). Systematische Übersicht der bisher bekannten Gattungen der Florideen. *Flora oder Allgemeine botanische Zeitung* 72: 435–456, pl. XXI.



Fig. 1. *Halymenia monardiana* Montagne (PC 0058988), here designated as **lectotype**. **Fig. 2.** *Sebdenia dichotoma* Berthold (SZN 001842), here designated as **lectotype**.