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# TAXONOMY AND NOMENCLATURE OF THE TYPE SPECIES OF *DUMONTIA* LAMOUROUX (RHODOPHYTA)

Isabella A. Abbott<sup>1</sup>

## Summary

*Dumontia contorta* (Gmelin) Ruprecht is the earliest available name for the widely distributed northern hemisphere red alga, *D. incrassata* (Müller) Lamouroux, which has also been incorrectly known as *D. filiformis* (Hornemann) Greville and *D. filiformis* (Lyngbye) J. Agardh.

The genus *Dumontia* (Dumontiaceae, Cryptonemiales) was created by Lamouroux (1813: 133), with four species included, *D. incrassata*, *D. sobolifera*, *D. ventricosa*, and *D. triquetra*. Of these, only *D. incrassata* (Müller) Lamouroux is retained in the genus as currently understood, and must be considered as the residual lectotype species of the genus. The remaining species have been transferred to other genera: *D. sobolifera* (*Ulva sobolifera* Oeder [1767]) by Ruprecht (1851) to *Halosaccion soboliferum*, currently known as *Halosaccion ramentaceum* (L.) J. Agardh; *D. ventricosa* to *Chrysomenia ventricosa* (C. Agardh) J. Agardh<sup>2</sup> and *D. triquetra* to the synonymy of *Sciniaia furcellata* (Turner) Bivona (see Setchell, 1914).

The binomial *Dumontia incrassata* (Müller) Lamouroux (1813: 133) is widely used (Parke and Dixon, 1976; Taylor, 1957; Kylin, 1956) and has as its basionym *Ulva incrassata* Müller (1775), so cited by Lamouroux (1813). However, the binomial *Dumontia filiformis* (Hornemann) Greville (1830: 165—usually cited as *D. filiformis* (Fl. Dan.) Greville in the older literature—is also used (DeToni, 1905: 1621; Okamura, 1936: 475). *Dumontia filiformis* takes its specific name from *Ulva filiformis* Hudson (1778: 585), as indicated by Hornemann (1813), though Hornemann is usually cited, e.g., by Greville, 1830, and those following him, as the author of *U. filiformis* in the context of *Dumontia*. Lyngbye (1819) followed by C. Agardh (1822) attributed the name *Conferva filiformis* to “Fl. Dan. t. 1480, fig. 2” [Hornemann, 1813] which appears to be a *lapis feder* as I am unable to find other references to *C. filiformis*. *Conferva filiformis* was used in connection with *Halymenia filiformis* C. Agardh (1822: 214) and with *Gastridium filiforme* Lyngbye (1819: 68). Lyngbye also listed *Ulva incrassata* “Fl. dan. t. 653” [Müller, 1775] as the basionym for *Gastridium filiforme*  $\beta$  *incrassatum*. Agardh also listed *Dumontia incrassata* [Lamouroux 1813] and *Fucus contortus* Gmelin (1768) without further notes.

In terms of nomenclature, it is seen that *Dumontia incrassata* (Müller) Lamouroux is the older of the two names applied to the type species of *Dumontia*. Ruprecht

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<sup>2</sup> *Dumontia ventricosa*, a new species of Lamouroux (1813) was illustrated by him (Tab. 4, fig. 6) but never described, hence *nomen nudum*. C. Agardh (1822: 211) was the first to describe the species as *Halymenia ventricosa*, citing *D. ventricosa* Lamouroux as a synonym and referring to the illustration of Lamouroux. When J. Agardh (1842: 105) created the genus *Chrysomenia* (currently placed in the Rhodymeniales), he cited *Halymenia ventricosa* C. Agardh as the basionym of *C. ventricosa*. Schmitz (1889) selected *C. ventricosa* (Lamour.) J. Agardh as the type species for the genus *Chrysomenia*. The correct authors should be *Chrysomenia ventricosa* (C. Agardh) J. Agardh.

(1851: 295), however, placed an even earlier name, *Fucus contortus* Gmelin (1768: 181) in *Dumontia* as *Dumontia contorta* (Gmelin) Ruprecht. The illustration of Gmelin (1768, pl. 22, fig. 1) appears to me to be representative of specimens from the north Atlantic (Kilar and Mathiesen, 1978, fig. 1; Taylor, 1957, pl. 35, fig. 7; Newton, 1931, fig. 168, for example) and conspecific with *D. incrassata* (Müller) Lamouroux. The specimen was collected in drift on the coast of Holland at Scheveningen, near The Hague, and sent to Gmelin by Pallas (Gmelin, 1768). Hence, *Dumontia contorta* (Gmelin) Ruprecht (1851) appears to be the earliest valid name for the type species of *Dumontia*, whose nomenclatural type remains *D. incrassata* (Müller) Lamouroux. The selection of a type species by Schmitz (1889) was superfluous.

In the absence of known specimens, typification of the original Gmelin material is not at present possible, and in accordance with Article 9, Note 1 of ICBN (Stafleu et al., 1972) it would seem best to typify *Fucus contortus* Gmelin by the original illustration (Gmelin, 1768, pl. 22, fig. 1). This has been done with other species described by Gmelin such as *Fucus capillaceus* (Dixon, 1960).

In terms of taxonomy, it is clear that a variety of authors have accepted *D. incrassata* and *D. filiformis* as conspecific. Ruprecht (1851), while accepting *Ulva filiformis* Hudson (1778) as synonymous with *D. contorta*, strongly objected (p. 302) to Hornemann's *U. filiformis* in *Flora danica*, (t. 1480, fig. 2) as being the same; he was critical of Greville for supporting the use of Hornemann's *U. filiformis* as applied to *Dumontia*, and finally claimed that he had examined some specimens in the Mertens herbarium that corresponded to Hornemann's illustration, and found them to be *Cystoclonium purpurascens* (= *C. purpureum* (Hudson) Batters). These opinions made it clear that *Ulva filiformis* Hudson was an acceptable basionym of *Dumontia filiformis* but a taxonomic synonym of *Fucus contortus* Gmelin. Moreover, the illustration of Hornemann as representing *Ulva filiformis* was in doubt (Ruprecht, 1851), a taxonomic opinion that has not been pursued by others. J. Agardh (1876) avoided the controversy by using *Gastridium filiforme* Lyngbye (1819: 68) as the basionym of *Dumontia filiformis* (Lyngbye) J. Agardh, clearly a superfluous combination. Setchell and Gardner (1903), following J. Agardh (1876), chose *D. filiformis* (Lyngbye) J. Agardh because "most of the species placed under *Dumontia* by Postels and Ruprecht are to be referred to *Halosaccion* and *Gloiopeltis* . . ." (neither genus known from the coast of the Netherlands, by the way). When writing on *Dumontia* of New England in 1923, Setchell used *D. filiformis* (Hudson) Greville, the first time that Hudson was given direct acknowledgement of the basionym, *Ulva filiformis*.

In the widely used *Sylloge algarum*, DeToni (1905) listed *D. contorta* "partim?" as a synonym of *D. filiformis* (Fl. dan.) Grev. Tokida (1954), one of the most recent to examine the *Dumontia contorta* question, believed that the illustration of Gmelin (1768, pl. 22, fig. 1) was "rather repeatedly ramified" compared to illustrations he had seen of *D. incrassata*.

*Dumontia contorta* (Gmelin) Ruprecht has been applied more recently by Abbott (1962) and Dawson (1966). Only one other species is currently included in the genus: *D. simplex* Cotton (1906), known from Korea (type locality), northern Japan, the Kurile Islands, Saghalien, and Dairen. Its northern distribution (Okamura, 1928; Tokida, 1954) overlaps that of *D. contorta* (Setchell, 1923) but it appears to be wholly unbranched (Okamura, 1928, pl. 247), thus differing from the branching plants known as *D. contorta*. Kawashima (1959) showed that the development of the female reproductive structures of *D. simplex* is similar but not identical to that of *D. contorta* (as *D. incrassata*).

The taxa treated in this paper may be summarized as follows:

*Dumontia contorta* (Gmelin) Ruprecht (1851: 295).

Basionym: *Fucus contortus* Gmelin (1768: 181).

*Dumontia incrassata* (Müller) Lamouroux (1813: 133).

Basionym: *Ulva incrassata* Müller (1775: 653). (Nomenclatural type; facultative synonym and generic holotype).

# Facultative synonyms:

- Dumontia filiformis* (Hudson) Greville (1830: 165).  
Basionym: *Ulva filiformis* Hudson (1778: 585).  
*Dumontia filiformis* (Hornemann) Greville (1830: 165).  
Basionym: *Ulva filiformis* Hornemann (1813: 1480).  
*Gastridium filiforme* Lyngbye (1819: 68).  
*Halymenia filiformis* C. Agardh (1822: 214).  
*Dumontia filiformis* (Lyngbye) J. Agardh (1876: 257).  
Basionym: *Gastridium filiforme* Lyngbye (1819: 68).

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