

Lectotypification of the red algal species *Fucus thyrsoides* Turner (*Rhodophyta*, *Rhodomelaceae*)

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When Turner (1808: 38, pl. 19) described *Fucus thyrsoides* Turner, he cited two syntype localities for his new species, a collection from New Zealand made by Sir Joseph Banks (1743–1821) and one from Jamaica made by Dr William Wright (1735–1819). At the same time, Turner also recognized *F. thyrsoides* β [var.] *major* based on a specimen from the Red Sea provided by Arthur Annesley, 10th Viscount [Lord] Valentia (1785–1863). Initially, C. Agardh (1817) transferred Turner's species to *Chondria* as *C. thyrsoides* (Turner) C. Agardh, but he later (C. Agardh, 1822) referred it to *Chondria papillosa* var. *thyrsoides* (Turner) C. Agardh, while treating Turner's *F. thyrsoides* var. *major* as conspecific with the nominate variety of *C. papillosa* C. Agardh, which was followed by Kützing (1849). Gaillon (1828) proposed the binomial *Laurencia thyrsoides* (Turner) Gaillon. Kützing (1865, pl. 62: figs f, g) depicted *L. thyrsoides* from the Gulf of Mexico. Harvey (1855: 234) treated *Fucus thyrsoides* as a taxonomic synonym of *Laurencia papillosa*. This taxonomic proposal was accepted by most subsequent workers (e.g., Zanardini, 1858; J. Agardh, 1876; Hauck, 1883; De Toni, 1903; Preda, 1908; Børgesen, 1918; Taylor, 1960; Desikachary & al., 1998; Ortega et al., 2001). The name *L. papillosa* var. *thyrsoides* was created by Sonder (1871) and followed by Grunow (1874), Chapman (1971), and N'Yeurt & al. (1996), but this name was already occupied by the heterotypic *Laurencia papillosa* var. *thyrsoides* Zanardini (Zanardini, 1841; type locality: Istria in the Adriatic). Garbary & Harper (1998) transferred *L. papillosa* to their segregate genus *Chondrophycus*. Subsequently, the segregate genus *Palisada* was recognized by Nam (2007), and *Palisada papillosa* (C. Agardh) K. W. Nam was proposed (Nam, 2007). Later, Cassano & al. (2009) provided evidence to treat *L. papillosa* as conspecific with *Palisada perforata* (Bory) K. W. Nam.

To date, however, a lectotype has not been designated for *Fucus thyrsoides* Turner. A loan of the syntype collections of *Fucus thyrsoides* Turner was obtained by **MICH** from The Natural History Museum (**BM**), London. These collections, which are all “on permanent loan” to the **BM** from the Royal Botanic Gardens (**K**), were comprised of the following:

Fucus thyrsoides Turner, leg. Sir J. Banks, New Zealand. Barcode **BM000659908**
Fucus thyrsoides Turner, leg. Wright, Jamaica. No. 23. Barcode **BM00065099**
Fucus thyrsoides Turner, leg. Lord Valentia, Red Sea, 1806. Barcode **BM000659910**

The specimen from New Zealand (Fig. 1) has the label data of “F. Thyrsoides Hist. Fuc. I, pl. 19”, “New Zealand”, “Sir J. Banks”, “June 1800”, and “Herb. Turner” as well as “Fucus muricatus Gmel.? male, Tab. 6. fig. 4”. This specimen closely matches Turner's depiction of the habit of *Fucus thyrsoides* (Turner 1808, pl. 19 a, reproduced here as Fig. 2). This specimen is also in full agreement with Turner's description (Turner 1808: 38) of the alga. I therefore here designate this Banks specimen from New Zealand as the lectotype of *Fucus thyrsoides* Turner. Turner (1808: 38) stated that he derived the epithet “*thyrsoides*” because of the “resemblance which fructified specimens bear in miniature to the figures of the *Thyrsi* used by the Mænades in their Bacchanalia”. The currently accept name for this alga is *Laurencia thyrsoides* (Turner) Gaillon:

Laurencia thyrsoides (Turner) Gaillon 1828: 363.
Basionym: *Fucus thyrsoides* Turner *Fuci*, p. 38, pl. 19, 1808.

Homotypic synonyms: *Chondria thyrsoides* (Turner) C. Agardh 1817: xviii. *Chondria papillosa* var. *thyrsoides* (Turner) C. Agardh 1822: 345; 1824: 203. *Laurencia papillosa* var. *thyrsoides* (Turner) Sonder 1871: 53, *nom. illeg., non Laurencia papillosa* var. *thyrsoides* Zanardini 1841: 198.

The Jamaican specimens of *Fucus thyrsoides* collected by W. Wright, that is, the remaining syntype, is identified here as *Palisada perforata* (Bory) K.W. Nam.

Laurencia thyrsoifera J. Agardh was described from the Chatham Islands of New Zealand (J. Agardh 1876: 654) based on material from a collector Agardh refers to as “Travers.” Yamada (1931) provided more information about this species, depicting the type species in the Agardh herbarium (LD, Yamada 1931: pl. 30: fig. b), and saying that the protologue collection contained both cystocarp and tetrasporangial specimens. The attachment, or “root”, was said by Yamada to be fibrous, and the thalli had percurrent axes, with “always distichous pinnate-paniculate” branching, the branches being opposite or alternate. Yamada observed the presence of lenticular thickenings in the walls of medullary cells and that the surface cells in cross-sections were not arranged into a palisade layer. Nelson & al. (1991) cited many collections of this species from the Chatham Islands, whereas Adams (1994, pl. 113) described this species as being “a widespread but never particularly abundant species” in New Zealand. Some literature exists on the chemical analysis of *Laurencia thyrsoifera* (Blunt & al., 1978, 1981, 1984; Miller & al., 1993). It was the origin of the compound “thyrsoiferol” (Little & Nishiguchi, 2008), which has been studied for its cytotoxic properties (Mahdi & al., 2011). According to Adams (1994) early New Zealand records of *L. papillosa*, *L. obtusa* (Hudson) J.V. Lamouroux and *L. virgata* (C. Agardh) J. Agardh probably belong under *L. thyrsoifera*, but she made no mention of the existence of *Fucus thyrsoides* from New Zealand, despite it being one of the syntype localities. New Zealand specimens of *L. thyrsoifera* were included in a molecular systematics study of *Laurencia*, *Osmundea*, and *Palisada* by Lewis & al. (2008).

The purpose of this note was to designate the lectotype of *Fucus thyrsoides* Turner as being a specimen in the BM and having New Zealand as its type locality. Because the basionym of *Laurencia thyrsoides* has priority over *L. thyrsoifera*, a molecular analysis of *L. thyrsoides* is called for to understand the relationship between this pair of species, if they are distinct or represent a single taxon.

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Fig. 1. *Fucus thyrsoides* Turner. Reproduction of Turner's pl. 19, a, 1808.



Fig. 2. *Fucus thyrsoides* Turner. Lectotype (here designated) in **BM**. The Joseph Banks collection from New Zealand. Barcode **BM000659908**