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Sporochnus anomalus (Pallas) comb. nov. (Sporochnales, Phaeophyceae), the oldest available name for *Sporochnus gaertnera* C. Agardh

Michael J. WYNNE

Department of Ecology and Evolutionary Biology and Herbarium, University of Michigan, Ann Arbor, MI 48109, U.S.A.

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Abstract – *Fucus anomalus* Pallas (1766a) is shown to be the oldest legitimate, valid and available name for the brown alga currently known as *Sporochnus gaertnera* C. Agardh. Thus, the binomial *Sporochnus anomalus* (Pallas) comb. nov. is proposed. A nomenclatural and taxonomic historical background on this alga is also provided.

Marine brown algae / nomenclature / Phaeophyceae / Sporochnus anomalus / *Sporochnus gaertnera*

Résumé – ***Sporochnus anomalus* (Pallas) comb. nov. (Sporochnales, Phaeophyceae), le plus ancien nom disponible pour *Sporochnus gaertnera* C. Agardh.** *Fucus anomalus* Pallas (1766a) est le plus ancien nom légitime, valide et disponible pour l'algue brune actuellement connue sous le nom de *Sporochnus gaertnera* C. Agardh. Le binome *Sporochnus anomalus* (Pallas) comb. nov. est donc proposé. Un historique de la nomenclature et de la taxinomie de cette algue est aussi fourni. (Traduit par la Rédaction)

algues brunes marines / nomenclature / Phaeophyceae / *Sporochnus anomalus* / *Sporochnus gaertnera*

This paper reports the discovery that *Fucus anomalus* Pallas is the earliest available name for the alga currently known as *Sporochnus gaertnera* C. Agardh. Relevant historical and nomenclatural data are provided, and the binomial *Sporochnus anomalus* (Pallas) comb. nov. is proposed. The relationship of *S. anomalus* to *S. pedunculatus* (Hudson) C. Agardh, the type species of *Sporochnus*, is also considered. The name *Fucus anomalus* Pallas (1766a) is an older name than *F. pedunculatus* Hudson (1778), if the two taxa were to be regarded as conspecific.

The genus *Sporochnus* was established by C. Agardh (1817) to include four species, all of which had been depicted by Turner (1811) in consecutive plates in the third volume of his *Fuci*: *Fucus inermis* Turner (pl. 186), *F. aculeatus* Linnaeus (pl. 187), *F. pedunculatus* Hudson (pl. 188), and *F. radiciformis* Turner (pl. 189). C. Agardh (1817) designated *S. pedunculatus* (Hudson) C. Agardh to be the type of the genus. Besides the generitype, the only other species of the original four still remaining in the genus is *S. radiciformis* (Turner) C. Agardh. *Fucus*

* Correspondence and reprints: mwynne@umich.edu

inermis is now known as *Perithalia caudata* (Labillardière) Womersley (Womersley, 1987), and *F. aculeatus* is now known as *Desmarestia aculeata* (Linnaeus) Lamouroux (Fletcher, 1987).

Fucus gaertnera was described and illustrated by Gmelin (1768, p. 164, pl. XIX), who cited its provenance simply as "Mare mediterraneum". The fact that Gmelin cited *Fucus anomalus* Pallas (1766a), a valid, legitimate, and available name, renders Gmelin's *F. gaertnera* as superfluous and illegitimate. Poiret (1808) listed *F. anomalus* as conspecific with *F. gaertnera*. In Turner's (1811) treatment of *Fucus pedunculatus* Hudson (1778), he included *F. gaertnera* Gmelin as a taxonomic synonym as well as *F. anomalus* Pallas "(*fide* Gmelini)". When C. Agardh (1820) effected the transfer of *Fucus gaertnera* to *Sporochnus*, the resultant binomial must be treated as the name of a new species, *S. gaertnera* C. Agardh. It is not superfluous, however, in that Agardh cited *F. anomalus* with a query. C. Agardh (1820) indicated it occurred at "Gades" [Cádiz, Spain], based on a specimen sent by Cabrera. Later, C. Agardh (1824) omitted the Pallas name, and it soon slipped into near oblivion. J. Agardh (1848) recognized both *S. pedunculatus* and *S. gaertnera* but did not mention *F. anomalus*. Kützing (1849), and DeToni (1895) continued to recognize *S. gaertnera*, listing *F. anomalus* Pallas in synonymy but with a query. In his "key to the world's species of *Sporochnus*", Brostoff (1984) recognized eleven species but made no mention of *S. gaertnera*.

The first question is whether *Sporochnus gaertnera* [sometimes incorrectly as "*gaertneri*"] is taxonomically distinct from *S. pedunculatus*. Gallardo *et al.* (1985) recognized both species, indicating that *S. pedunculatus* occurred on both Atlantic and Mediterranean coasts of the Iberian Peninsula but that *S. gaertnera* was only on the Atlantic coast. Their footnote on *S. gaertnera* stated that it «requires taxonomical revision». But most workers have recognized this pair of species as distinct. According to Hamel (1938), *S. gaertnera* is close to *S. pedunculatus* but can be distinguished because it reaches a larger size and its receptacles are spaced out, longer [1-2 (-4) mm] and borne on longer pedicels [2-3 (-7) mm], whereas receptacles in *S. pedunculatus* are 0.5-1.0 mm in length and pedicels barely 1.0 mm in length. Early and more recent workers (e.g., Harvey, 1846-1851, pl. 16; Hauck, 1882-1885, fig. 165; Fletcher, 1987, figs 89b, 90 f, g) have similarly depicted the receptacles of *S. pedunculatus* as often being initially sessile and wart-like and later becoming stalked but with relatively short stalks. Receptacles in *S. gaertnera* have been depicted as being relatively elongate (Kützing, 1859, pl. 80, fig. Ia). DeToni (1895) reported the pedicels to be 6-9 mm in length.

Thus, in contemporary taxonomy, *Sporochnus gaertnera* C. Agardh is an accepted name for a species of *Sporochnus* with a somewhat restricted distribution. It occurs in the Canary Islands (Afonso-Carillo & Sansón, 1999; Haroun *et al.*, 2002) and from southern Spain and Portugal in the eastern North Atlantic (Seoane-Camba, 1965; South & Tittley, 1986). In the Mediterranean Sea it is known from the coast of Algeria (Montagne, 1838, 1846-1849; Bornet, 1892; Feldmann, 1931; Perret-Boudouresque & Seridi, 1985), Morocco (Benhissoune *et al.*, 2002) and Sicliy (Giaccone *et al.*, 1972; Ribera *et al.*, 1992). Its reported occurrence at Naples (Kützing, 1849) was regarded as doubtful by Funk (1927, 1955).

The second question is what is the connection of *Sporochnus gaertnera* to *Fucus anomalus* Pallas, the name that was cited by Gmelin (1768) when he described *Fucus gaertnera* nom. illeg. The author of *F. anomalus* was Peter Simon Pallas (1741-1811), born in Berlin, a student in Halle, Göttingen, and Leiden, and with a degree as a medical doctor. While in England, he met a number of British scientists, and he became a member of the Royal Society of London. He had several publications on natural history, especially on animals. His work attracted the at-

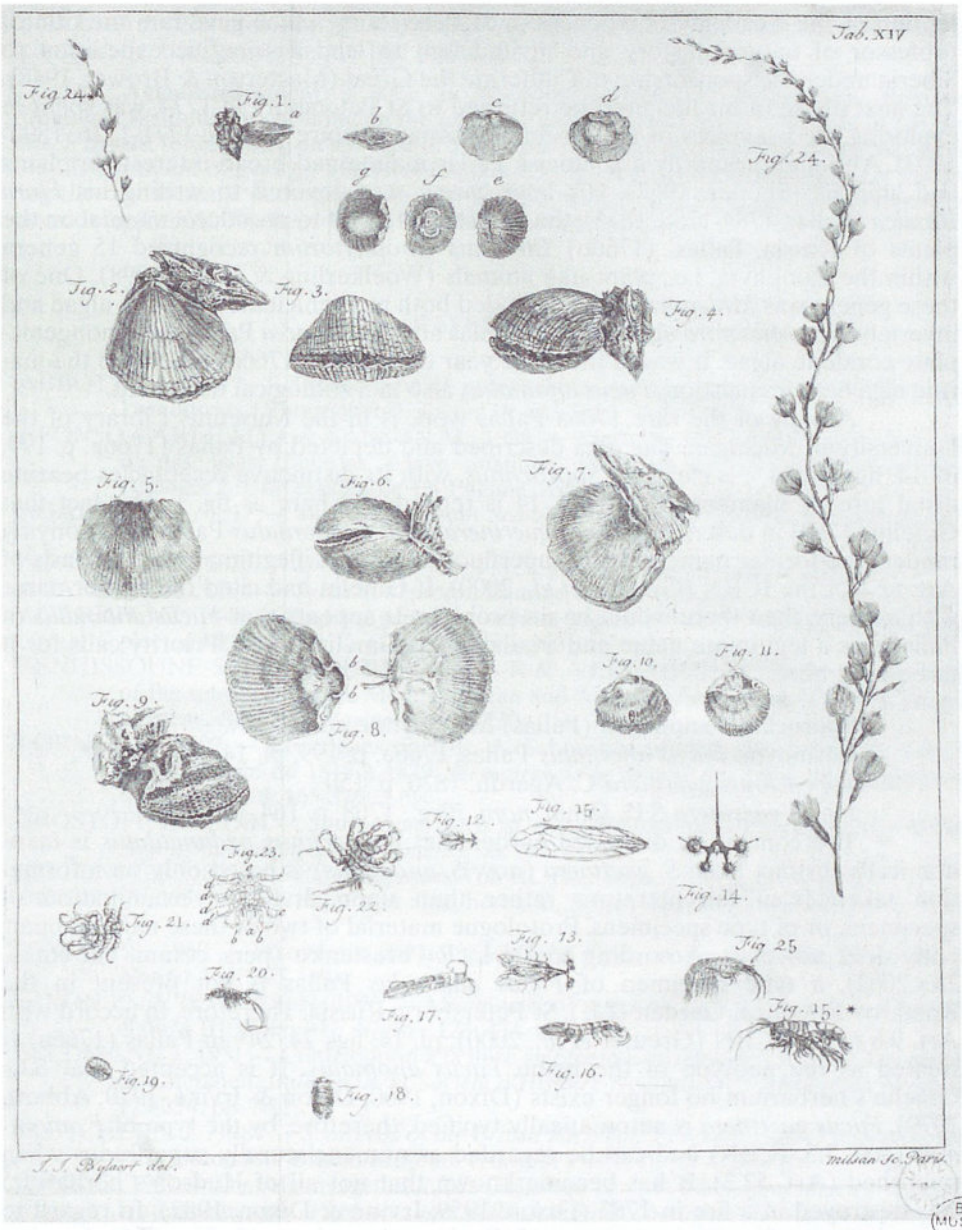

Fig. 1. Reproduction of pl. 14 in Pallas (1766a) including figs 24, 24* of *Fucus anomalus* Pallas.

tention of the Academy of Sciences in St Petersburg, which gave him the title of professor of natural history and invited him to lead a scientific expedition to Siberia under the sponsorship of Catherine the Great (Masterson & Brower, 1948). The next phase of his life, until he returned to St Petersburg in 1774, was spent in exploring the provinces of the far-flung Russian Empire (Pallas, 1771-1776, 1802-1803). Although primarily a zoologist, Pallas maintained broad interests in plants and animals (Shetler, 1967). His later career was devoted to writing his *Flora Rossica* (Pallas, 1784-1788, 1815), the first such attempt to produce a manual on the plants of Russia. Pallas' (1766b) *Elenchus Zoophytorum* recognized 15 genera within the Zoophyta, i.e., plant-like animals (Woelkerling & Lamy, 1998). One of these genera was *Millepora*, which included both nongeniculate coralline algae and invertebrates. *Millepora agariciformis* Pallas and *M. calcarea* Pallas were nongeniculate coralline algae. It was in the same year that Pallas (1766a) described the marine alga here in question, *Fucus anomalus*, also in a zoological treatment.

A copy of the rare 1766a Pallas work is in the Museums Library of the University of Michigan. The alga described and depicted by Pallas (1766a, p. 199, pl. 14, figs 24, 24*) is clearly a *Sporochnus*, with its distinctive receptacles bearing distal tufts of filaments. Pallas' pl. 14 is reproduced here as fig. 1. The fact that Gmelin (1768) in describing *Fucus gaertnera* cited *F. anomalus* Pallas in synonymy renders the former name initially superfluous and thus illegitimate on the basis of Art. 52.1 of the ICBN (Greuter *et al.*, 2000). If Gmelin had cited the earlier name with a query, then there would be no problem. It appears that *Fucus anomalus* of Pallas was a legitimate name and available for Gmelin to use. Priority calls for it to be used here:

Sporochnus anomalus (Pallas) M.J. Wynne comb. nov.
Basionym: *Fucus anomalus* Pallas, 1766a, p. 199, pl. 14, figs 24, 24*.
Sporochnus gaertnera C. Agardh, 1820, p. 150.
Fucus gaertnera S.G. Gmel. *nom. illeg.*, 1768, p. 164, pl. XIX.

The conclusion discussed earlier that *Sporochnus pedunculatus* is taxonomically distinct from *S. gaertnera* (now *S. anomalus*) is based only on information taken from the literature rather than upon first-hand examination of specimens, or of type specimens. Protologue material of two of these names apparently does not exist. According to Dr L. P. Perestenko (pers. comm. via email, 28.v.2002), a type specimen of *Fucus anomalus* Pallas is not present in the Komarov Botanical Garden (LE), St Petersburg, Russia. Therefore, in accord with Art. 9.6 of the ICBN (Greuter *et al.*, 2000), pl. 14, figs 24, 24* in Pallas (1766a) is treated as the neotype of the name *Fucus anomalus*. It is accepted that S.G. Gmelin's herbarium no longer exists (Dixon, 1960; Dixon & Irvine, 1970; Abbott, 1979). *Fucus gaertnera* is automatically typified, therefore, by the type of *F. anomalus* (Art. 7.5, ICBN) and can be regarded as nomenclaturally superfluous when published (Art. 52.3). It has become known that not all of Hudson's herbarium was destroyed in a fire in 1783 (Dixon, 1959; Irvine & Dixon, 1982). In regard to the existence of a type specimen of *Fucus pedunculatus* Hudson, Ms. Jennifer Bryant (pers. comm. via email, 15.vii.2002) informed me that the type folder of *F. pedunculatus* in the BM contains "more 'original' than actual type material". But she went on to say that there are two further specimens labelled "Hudson's Herbarium" (from Herb. Hooker at Kew) and "Hudson's Sale" (from Herb. Forster), with "no other data". These two specimens, which are listed in Tittley & Tyler (1983), are thought to be "pre-fire specimens" and therefore possible types.

Newly collected populations of specimens of *Sporochnus* are desirable to evaluate the variability of the presumed diagnostic characters separating *S. anom-*

alus from *S. pedunculatus*. It is pointed out that if these two taxa are treated as conspecific, the former name has priority.

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