

**“*Pleurotaenium sceptrum* (Roy) West & G.S. West” (*Desmidiaceae*, *Zygnematophyceae*)**Michael D. Guiry¹, Anatoliy Levanets² & Sanet Janse van Vuuren²¹AlgaeBase, Ryan Institute, University of Galway, Galway, H91 TK33, Ireland.²Unit for Environmental Sciences and Management, North-West University, Potchefstroom, South Africa (correspondence: 20868421@nwu.ac.za).

The genus name *Pleurotaenium* was introduced by Nägeli (1849: 104) for three entities: (1) the typus *Pleurotaenium trabecula* Nägeli (*‘Trabecula’*) based upon “*Closterium trabecula*” Ehrenberg (1832: 68, “Berlin, Sibirien”), an invalid, pre-starting-point designation that cannot currently serve as a basionym; (2) “*Pleurotaenium sceptrum*”, supposedly based upon pre-starting-point designation “*Closterium sceptrum*” Kützing (1845: 133), similarly unavailable as a basionym; and, (3) “*Pleurotaenium truncatum*” supposedly based upon the pre-starting-point designation “*Closterium truncatum*” Brébisson (in Meneghini 1840: 235), also unavailable as a basionym. However, the latter two designations were accompanied by the comment “*zu dieser Gattung gehören ferner wahrscheinlich...*” [probably also belong to this genus...]. It seems likely that Art. 36.1 applies to these designations, and they are not validly published as they were technically not accepted by Nägeli, although the application of Art. 36.1 to such cases can be controversial (W.-H. Kusber, pers. comm.).

West & West (1896: 235) introduced the name “P[leurotaenium] *Sceptrum nobis*” citing *Docidium sceptrum* Kützing (1849: 168), a valid post-starting-point-name, as the basionym, and included “*Docidium sceptrum* Roy” (Roy 1883: 37), probably intended as a “*sensu*”. This has led to various citations of the name *P. sceptrum* as “*P. sceptrum* (Kützing) West & G.S. West” and “*Pleurotaenium sceptrum* (Roy) West & G.S. West” but the correct name for this taxon, if it is accepted that “*Pleurotaenium sceptrum* Nägeli” is an invalid designation, is *Pleurotaenium sceptrum* (Kützing) West & G.S. West. The type is the type of “*Closterium sceptrum*” Kützing (1845: 133), “*In Torfmooren zwischen Sphagnum*” [in peatbogs between *Sphagnum*, probably in Thuringia in central Germany].

Prescott & al. (1975: 130, pl. XLII [42]): figs 3–10; the comments are probably Hannah T. Croasdale’s as she is named for the resulting new combinations) concluded under the designation “*Pleurotaenium sceptrum* (Roy) West & West” that “Further confusion is added by Kützing who used the epithet *sceptrum* both with *Closterium* (Kützing 1845, p. 133) and with *Docidium* (1849, p. 168) for a plant with plane apices, which is now considered to be *Docidium baculum* de Brébisson.” However, she seems not to have realised that both Kützing names are based on the same type. Unfortunately, neither Nägeli nor Kützing illustrated their materials but Kützing (1845: 133) does write that “...*die Spitzen breit abgestutzt;...*” [the tips broadly trimmed or truncated]. In her description of “*Pleurotaenium sceptrum* (Roy) West & West”, Croasdale (in Prescott & al. 1975) was describing North American material congruent with material described by Roy (1883: 39, as *Docidium sceptrum*) from Ireland (collected by William Archer) and illustrated by Wolle (1884b, 52, pl. X[10]: fig. 10, as *Docidium tridentulum*) from New Jersey. Croasdale (loc. cit.) advocated the use of “*Docidium sceptrum* Roy” (undoubtedly Roy 1883) for this taxon but this is not a valid name and even if it were valid, it would be an illegitimate later homonym of *Docidium sceptrum* Kützing. The synonymy with *Docidium baculum* discussed by Croasdale was previously proposed by Delponte (1873: 226) and referred to by Roy (1883: 40).

Accordingly, the designation “*Pleurotaenium sceptrum* Nägeli”, as described by Kützing (1845, “*Closterium sceptrum*”) is a synonym of *Docidium baculum* Brébisson (in Ralfs 1848: 158, pl.



XXXIII [33]: fig. 5 a, b) and the taxon described by Roy (1883: 40, “*D. sceptrum* Kg.” referring to material sent to him by William Archer from the “west of Ireland”), Wolle (1884a; 14, 1884b: 52, pl. 10: fig. 10, as *Docidium tridentulum*), West & West (1896: 235, pl. XXX [30]: figs 5, 6, 1904: 208, as *Pleurotaenium tridentulum*), and Krieger (1937: 408) as *Pleurotaenium tridentulum* (Wolle) West (in West & West 1904: 208).

Some 9 varieties of *Pleurotaenium tridentulum* have been described and all but one appear to be valid:

Pleurotaenium tridentulum var. *capitatum* West (1892, 120, pl. XXIV [24]: fig. 12, Lakes, Clifden to Roundstone, Co. Galway, Ireland)

Pleurotaenium tridentulum var. *fernaldii* W.R.Taylor (1934: 247, pl. XLVIII [48]: fig. 4, Grandys Brook, Newfoundland)

Pleurotaenium tridentulum var. *borgei* Willi Krieger (1937, 408, pl. 43: fig. 15, Cuba, based on unnamed forma of *Pleurotaenium tridentulum* var. *capitatum* of Borge, 1899)

Pleurotaenium tridentulum var. *hexacanthum* Grönblad (1945:11, fig. 34, Santarém, Para, Brazil)

Pleurotaenium tridentulum var. *breve* M.Hirano (1949, 65, fig. 2, Ozegahara marsh [Oze National Park], Kōzuke Province, Japan)

Pleurotaenium tridentulum var. *gracile* Kurt Förster & Eckert (in Förster 1964: pl. 2: figs 11–13)

“*Pleurotaenium tridentulum* var. *tenuissimum*” Grönblad & Croasdale (in Scott, Grönblad & Croasdale 1965: 30, figs 33, 34) is an invalid designation, the correct name for which is now *Pleurotaenium tenuissimum* Kurt Förster ex C.B.Araújo & C.E.M.Bicudo (2023: 2)

Pleurotaenium tridentulum var. *scottii* Kurt Förster (1973: 530, pl. 5: figs 8, 9, Wiggins, Stone Co., Mississippi)

One intended variety has been published invalidly (Turland & al. 2018: Art. 8.3,) and is here validated:

***Pleurotaenium tridentulum* var. *subturgidum* Skuja ex Guiry, Levanets & Janse van Vuuren, var. nov.**

Replaced designation: “*Pleurotaenium tridentulum* var. *subturgidum*” Skuja, *Nova Acta Regiae Societatis Scientiarum Upsaliensis, series 5:C 2*: 48, pl. VI [6], fig. 12, 1976, *nom. inval.*

Holotype [icon!]: Skuja (1976: 48, pl. VI [6], fig. 12, as “*Pleurotaenium tridentulum* var. *subturgidum*”; ICN Art. 40.5, Turland & al. 2018).

Type locality: unknown location, New Zealand.

Registration: <http://phycobank.org/105133>

Note: Skuja’s designation is invalid as it was clearly not based on a single gathering (ICN Art. 8.3), and we here designate a holotype. This variety was found in the following localities in New Zealand: I. North Island, Mari-Mari, moor pool, coll. H. Oswald, 20 November 1951. – II. North Island, Wallaceville, outside part of a moor near a lake, coll. H. Oswald, 30 November 1951. – III. North Island, Otaki, Otakai moor, coll. H. Oswald, 27 January 1952. – IV. North Island, No. 113, no label on sample, coll. H. Oswald. – V. South Island, Addisons Flat, No. 87, coll. H. Oswald, 23 December 1951. – VI. South Island, Okarito Moor, No. 96, coll. H. Oswald, 29 December 1951.

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