

Notes on the diatom collection of the Natural History Museum, London (BM) VI: A preliminary examination of type specimens of *Melosira dozyana* Kützing, its first place of publication. Some notes on the algal names described in Bosch's '*Enumeratio plantarum Zeelandiae Belgicae*'

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The place of first publication for the name of the diatom species *Melosira dozyana* (named for Frans [François] Dozy, 1807–1856, see Touw 2006) is usually given as Kützing's *Species Algarum* (1849: 29) and the name attributed to van den Bosch (Roelof Benjamin van den Bosch, 1810–1862, see TL-2, p. 288), hence *Melosira dozyana* Bosch ex Kützing (1849: 29; Fig. 1). The name was actually first published a few years earlier in the fourth part of van den Bosch's '*Enumeratio plantarum Zeelandiae Belgicae*' as *Melosira dozyana* "Kg." [= Kützing] (in van den Bosch, 1846: 85; Fig. 2). The descriptions given in both the 1846 and 1849 publications are identical, as is the locality, except for some minor details, such as the later publication has "*In aqua stagnante Hollandiae: Van den Bosch!*" (Kützing 1849: 29). The earlier account, however, has more information: "ZB. [ZB = Zuid-Beveland] *In aq. dulci stagnante cum Oedogr. [sic] capillarii* [= *Oedogonium capillare* Kützing ex Hirn]" (van den Bosch, 1846: 85). Neither publication includes an illustration. The description of the species is reproduced in the journal *Flora* (Vol. 30, No. 44: 715–716, 1847) in a "Literatur" account of the *Enumeratio*.

Additionally, in the second part of van den Bosch's *Prodromus florae Batavae*, he provides another account of *Melosira dozyana*, which has the same description as given before, and said to be found "In zoet water [...] In Herb. Wilhelminadorp* b. Goes, v.d.B. [van den Bosch]" (van den Bosch 1853: 275; see Fig. 3; it is of some interest that the index lists the species as "*Melosira Dozyana* v.d. B. [=van den Bosch]", p. 291). This account is supposed to include a figure (see Fig. 3).

As for specimens, in **BM** there is a single glass slide with the name *Melosira dozyana* (**BM** 18079), of which more details can be found in the unpublished catalogue of Kützing's collection (Fig. 4a, b). The slide label has the name of the species, *Melosira dozyana*, the number 981, and 'Vdb' (Fig. 5a). The number refers to the packet of material found in Kützing's herbarium and used to make slide **BM** 18079, and 'Vdb' clearly refers to the author's name: van den Bosch. Packet 981 in **BM** is labelled for *Melosira dozyana* with an alternative, and unpublished, name '*Gailloniella boschii* Brébisson', pencilled in. This name was never formally published. There is also reference to *Conferva capillaris* (Fig. 5 b), a name noted in the locality description as '*Oedogon. capillarii*' [= *Oedogonium capillare* Kützing ex Hirn]. The specimens on **BM** 18079 can be considered as part of original material. Unfortunately, the slide is broken (Fig. 5a) and the raw material in packet 981 has very few specimens. Some specimens were found on **BM** 18079 and can be considered *Melosira dozyana* (Figs 6–8).

Another set of specimens has been located in the Kützing collection held in **L** (L411861). This is a packet attached to a herbarium sheet with the label "(Herb. 301) | *Melosira dozyana* nov. sp. | *Nedl. Kruidk. Arch.* I, p. 85 | [...] *Oedogon. capillarii* | Wilhelminadorp Goes, June 1843. v.d.B". There is a second set of specimens in **L** (L411860 from "Herb. W.F.R. Suringar", "*Melosira dozyana* [...] v.d.B. [...] N°. 103. 30". These details are similar to, but not exactly the same as, those found on the **BM** herbarium sheet, which has: "*Gailloniella boschii* Bréb. 103. [...] *Conf. capillaris* No. 30 [...] Sept. 1844 v.d.B." (Fig. 5b). The specimens on L.411861 are also probably type material but have yet to be investigated. The **BM** specimens may have been examined by Brébisson prior to sending

* Wilhelminadorp is in Zeeland, in the municipality of Goes.

them to Kützing, which would account for Brébisson's unpublished name "*Gailloniella boschii*" on the label. A summary is thus:

Melosira dozyana Kützing (in van den Bosch) p. 85, 1846.

Synonyms: *Lysigonium dozyanum* ([‘Rosch’, sic] Bosch) Kuntze p. 902, 1892. "*Gaillonella boschii* Brébisson", *nom. inval.* [unpublished herbarium name]

Type: Holland, "Herb. 301. *Melosira dozyana* nov. sp. [...] *Odeogr. capillarii*. Wilhelminadorp Goes, June 1843. v.d.B", L.411861; "Melosira dozyana [...] v.d.B. [...] N°. 103. 30", Herb. W.F.R. Suringar, L.411860, "ZB. [ZB = Zuid-Beveland] In aq. dulci stagnante cum *Odeogr.* [sic] *capillarii*" (van den Bosch, 1846, p. 85), "In aqua stagnante Hollandiae: Van den Bosch!" (Kützing 1849: 29), **BM** 18079! (*Kützing* 981), potential isotype.

Note: Numerous van den Bosch samples can be found in Kützing's diatom collection in **BM**, **BR** and **L**, including further specimens of *Melosira dozyana* Kütz.

Some notes on the algal names described in Bosch's '*Enumeratio plantarum Zeelandiae Belgicae*'

In a series of short papers entitled '*Diagnosen und Bemerkungen zu neuen oder kritischen Algen*' published in parts in *Botanische Zeitung* during 1847, Kützing published a number of descriptions of new taxa, which included *Melosira dozyana* (Kützing 1847a–h, and in Kützing 1849). Several of these names were first published in the fourth part of Bosch's '*Enumeratio plantarum Zeelandiae Belgicae*' [van den Bosch 1846, see Table 1, column 2; for further commentary see Koster (1939) and Touw (2006); for details of the four parts of '*Enumeratio plantarum Zeelandiae Belgicae*' see below].

Notice of van den Bosch's '*Enumeratio plantarum Zeelandiae Belgicae*' appeared in *Botanische Zeitung* (1847: 908) and *Flora* (No. 44 [28th November] 1847, pp. 715–717). In the former, the new taxa were simply listed, but in the latter, descriptions of each were provided. The descriptions were identical to those published in van den Bosch (1846). More precise details of the collection localities for each species were provided in the first part of '*Enumeratio plantarum Zeelandiae Belgicae*' (van den Bosch 1841, p. 5, footnote 1):

Literis initialibus insulas nostras indicavi, in quibus species enumeratae lectae sunt, ommissa omni additione pone eas, quae omnibus communes censentur. W=Walcheren, ZB=Zuid-Beveland, NB=Noord-Beveland, S=Schouwen, TV=Tholen, ZY=Zeeuwsch-Vlaanderen.

Later, van den Bosch provided a further account that included the Kützing's algal species described in the '*Enumeratio plantarum Zeelandiae Belgicae*' in Volumen II, Pars II of *Prodromus florae Batavae* (1853, see Table 1, columns 5 and 6). TL-2 notes that "Bosch was the moving spirit behind the enterprise [the production of *Prodromus florae Batavae*] and signed the preface of the first volume", and that he was the "signing pref.[ace]" for Volumen II, Pars II, '*Plantae cellulares. Lichenes, Byssaceae et Algae.*' (TL-2, p. 289). A second edition ('*editio altera*') lacked algal taxa altogether (Macdonald 1893–1916).

Table 1. New algal names first published by Kützing (column 1): *Nederlandsch Kruidkundig Archief* (1846, column 2): *Flora* (44 [28th November] 1847, pp. 715–717) and *Botanische Zeitung* (1847 b, g–j, column 3); *Species Algarum* (1849, column 4); and *Prodromus florae Batavae* (1853, columns 5, description, column 6, apparent illustration); * = name change.

In the *Prodromus florae Batavae* there were supposedly five plates (Table 2). The first three (tables I–III) are of non-algal plants (with numerous illustrations of their parts) and can be found in Volumen II, Pars I (Table 2). Plates IV and V are said to be illustrations of various algae, some are those described in Volumen II, Pars II of *Prodromus florae Batavae*—these two plates have not been located (see below). The illustrations and what they are supposed to represent are summarised in Table 2.

Table 2. Plates in *Prodromus florae Batavae*: Tables I–III were printed in Volumen II, Pars I, Tables IV and V are listed for Volumen II, Pars II but have not been discovered in any copy so far examined.

Prodromus florae Batavae, Volumen II, Pars I

Plates	Figures	Page	
I	1–15	58	<i>Trichostomum limosum</i>
II	1–11	70	<i>Physcomitrium sphaericum</i> [β] <i>cuspidatum</i>
III	1–9	77(106)	<i>Sphagnum flexuosum</i>

Prodromus florae Batavae, Volumen II, Pars II

IV	1	185	<i>Chaetophora monilifera</i> Kütz.
	2	192	<i>Enteromorpha corniculata</i> Kütz.
	3	201	<i>Chantransia coccinea</i> Kütz.
	4	205	<i>Rhizoclonium setaceum</i> Kütz.
	5	209	<i>Conferva punctifera</i> Kütz.
V	1	213	<i>Stigeoclonium fasciculare</i> Kütz.
	2	215	<i>Ulothrix lenormandii</i> Kütz. [= <i>Hormidium lenormandii</i> Kütz.]
	3	235	<i>Characium sieboldii</i> A.Braun in Kütz.
	4	242	<i>Saprolegnia tenuis</i> Kütz.
	5	244	<i>Hygrocrocis decaisnei</i> Kütz.
	6	244	<i>Cryptococcus sanguineus</i> Kütz.
	7	275	<i>Melosira dozyana</i> Kütz.

No mention of any plates is made in the summary of *Prodromus florae Batavae* in TL-2, in Oudemans (1877: 254) or in Kützing’s *Species Algarum* (1849). A number of online copies of *Prodromus florae Batavae*, as well as a printed copy in the London Natural History Museum library, have been inspected but none have plates IV and V. Additionally, in Volume II, Pars IV it is noted that “Ayant rencontré [...] des espèces et des localités qui n’avaient pas été mentionnées dans les trois premières parties du second volume du Prodrome, nous les avons réunies en tête de cette dernière partie sous le titre d’Addenda” (van den Bosch, 1866: x) but also makes no mention of pls IV and V. An unanswered question arises: were the plates ever published? Even copies at the Botanical Library of Naturalis (the former library of the Herbarium Leiden), some of which appear to be proofs, lack these two plates. The archives of Nederlandse Botanische Vereeniging, the

society that published the *Prodromus*, are currently inaccessible, but it now seems unlikely that plates IV and V were never published.

Copies of *Prodromus florae Batavae* examined (digitally) in various libraries are:

NY (New York Botanical Gardens)	Without plates
MA (Real Jardín Botánico)	Includes plates I-III, lacks plates IV-V
Lyon Public Library	Includes plates I-III, lacks plates IV-V
University of California Berkeley	Includes plates I-III, lacks plates IV-V
GH (Harvard University)	Includes plates I-III, lacks plates IV-V
Bayerische Staatsbibliothek	Includes plates I-III, lacks plates IV-V
Paris Natural History Museum, Central Library	Includes plates I-III, lacks plates IV-V (two copies)
Naturalis Botanical Library, Leiden	Without plates

Our thanks go to Anja Buijsen (Informatiespecialist, Naturalis Botanical Library) and to the Naturalis Biodiversity Center for permission to reproduce the image in Fig. 9.

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- Bosch, R.B. van den (1846). Enumeratio plantarum Zeelandiae Belgicae indigenarum quarta. *Nederlandsch Kruidkundig Archief* 1(1): 84–115.
- Bosch, R.B. van den (1851). *Prodromus florae Batavae* [...] Volumen II. Pars I. (Plantae cellulares. Musci frondosi et Hepaticae), [i]–viii, [1]–116, Tab. I–III. Sumtibus Societatis, apud Jac. Hazenberg, Cornelii Fil., Leyden.
- Bosch, R.B. van den (1853). *Prodromus florae Batavae* [...]. Volumen II, Pars II (Plantae cellulares. Lichenes, Byssaceae et Algae.), [v]–viii, [117]–301. Sumtibus Societatis, apud Jac. Hazenberg, Cornelii Fil., Leyden.
- Prefatio, pp. [v]–viii
- Subclass Lichenes, pp. [117]–165
- Subclass Byssaceae, pp. 166–168
- Subclass Algae, pp. 169–281
- Index Generum, Specierum, et Synonymorum, pp. 282–301
- Bosch, R.B. van den (1866). *Prodromus florae Batavae* [...]. Volumen II. Pars IV. (Fungi), Addenda ad Vol. II, Part. 1, 2, en 3^{am}. [1]–9. Sumtibus Societatis, apud Jac. Hazenberg, Cornelii Fil., Leyden.
- Koster, J.Th. (1939). A review of the taxonomical and ecological studies on Netherlands' Algae. *Recueil des Travaux Botaniques Néerlandais* 36: 494–501.
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- 1847a. *Botanische Zeitung* 5 (1, 1st Jan.): 1–5
- 1847b. *Botanische Zeitung* 5 (2, 8th Jan.): 22–25
- 1847c. *Botanische Zeitung* 5 (3, 15th Jan.): 33–38
- 1847d. *Botanische Zeitung* 5 (4, 22nd Jan.): 52–55
- 1847e. *Botanische Zeitung* 5 (10, 5th March): 164–167
- 1847f. *Botanische Zeitung* 5 (11, 12th March): 177–180
- 1847g. *Botanische Zeitung* 5 (12, 19th March): 193–198
- 1847h. *Botanische Zeitung* 5 (13, 26th March): 219–223
- Macdonald, F.E. (1893–1916). *Prodromus florae Batavae*. Editio altera. Nieuwe lijst der Nederlandsche phanerogamen en vaatkryptogamen. Uitgegeven door de Nederlandsche Botanische Vereeniging. Nijmegen.

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- Touw, A. (2006). *Bryologia javanica*: An outline of Dutch nineteenth century research on Asian mosses and guidelines for the typification of species described by Reinwardt, Molkenboer, and Dozy. *Journal Hattori Botanical Laboratory* 100: 495–515.

1 9) **M. Dozyana**. Van den Bosch in litt. — M. articulis cylindricis, subtiliter punctatis, diametro aequalibus vel parum longioribus. Diam. $\frac{1}{95}$ — $\frac{1}{65}$ ''' . — In aqua stagnante Hollandiae: van den Bosch! (v. s.)

2 Dozyana n. sp.
Articulis cylindricis, subtiliter punctatis, diametro aequalibus vel parum longioribus; diam. $\frac{1}{95}$ '''— $\frac{1}{65}$ ''' Kg.
ZB. In aq. dulci stagnante cum *Oedogr. capillari*.

3 **2338. M. Dozyana** In zoet water. Tab. V f. VII.
Articulis cylindricis, subtiliter punctatis, diametro ($\frac{1}{95}$ — $\frac{1}{65}$ ''') aequalibus vel parum longioribus. Kg.
(Spec. p. 29).
In Herb.: Wilhelminadorp b. Goes, v. d. B.

4a 981 103 Gaillonella Boschis Brub. Inter
Caespites Conf. capillaris No 30 in aq.
dulc. Stage Sept 1844 v. d. B.
Oedogonium Gomphonema parvula. Enthält keine Gaillonella

4b 9, Dozyana Bosch 981 Holl ?

Figs 1-4. *Melosira dozyana*. **Fig. 1.** Reproduction of the description given in Kützing (1849, p. 29). **Fig. 2.** Reproduction of the description given in van den Bosch's 'Enumeratio plantarum Zeelandiae Belgicae' (van den Bosch, 1846: 85). **Fig. 3.** Reproduction of the description given in van den Bosch (1853: 275); this account is supposed to include a figure. **Fig. 4 a, b.** Notes from the unpublished catalogue of Kützing's collection.



Figs 5–9. *Melosira dozyana*. **Fig. 5a.** Slide BM 18079 for *Melosira dozyana*, label with number 981 and 'Vdb' = van den Bosch. **Fig. 5b.** Packet 981 (BM), labelled for *Melosira dozyana* and the unpublished, invalid designation "*Gaillonella boschii* Brébisson", pencilled in. There is also reference to *Conferva capillaris* [*Oedogonium capillare*]. **Figs 6–8.** Images of the few specimens of *Melosira dozyana* from BM 18079. **Fig. 9.** Part of the label for the set of specimens in the Kützing collection held in L (L411861), reproduced with permission of Naturalis Biodiversity Center. Scale bar = 10µm.