

Lectotypification of four former *Odontidium* species described by William Smith (*Bacillariophyta*, *Fragilariales*)

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In 1856, the Reverend William Smith (1808–1857) described four new *Odontidium* species in the second volume of his “*A synopsis of the British Diatomaceae*” (Smith 1856). Smith observed the new species in several samples and listed all localities for each species. The original collection of the British Diatomaceae, containing almost all samples used to prepare the two volumes of the synopsis, was later included in the Van Heurck collection, now conserved in the collection of Meise Botanic Garden (BR, Belgium). Hoover (1976) published a catalogue of the William Smith collection during a visit of the Van Heurck collection when it was still housed in the Antwerp Zoo (Belgium) [the botanical parts of the Van Heurck collection were moved from Antwerp to Meise Botanic Garden (BR) in 2006, whereas the zoological parts were finally transferred to the Royal Institute of Natural History in Brussels, Belgium and the Van Heurck microscope collection was moved to the Science Museum of Ghent University (Belgium) (Van de Vijver, pers. obs.)]. Hoover (1976) listed syntypes for almost all species that Smith described as new in 1853 and 1856. A syntype is considered “Any specimen cited in the protologue when there is no holotype, or any of two or more specimens simultaneously designated in the protologue as types” (ICN Art. 9.6, Turland & al. 2018).

In the genus *Odontidium*, Hoover (1976: 60 & 61) listed syntypes only for *O. tabellaria* W.Smith (1856: 17, pl. 34, fig. 291) and *O. parasiticum* W.Smith (1856: 19, Suppl. pl. 60: fig. 375), but not for the other two species. In 2015, Morales & al. studied the original material of all four *Odontidium* species and listed syntypes for *O. harrisonii* W.Smith (1856: 18, Suppl. pl. 60: fig. 373) and *O. mutabile* W.Smith (1856: 17, pl. 34: fig. 290). The morphological analyses in Morales & al. (2015) were only based on one historic sample per species, although for three *Odontidium* species (*O. harrisonii*, *O. tabellaria* and *O. mutabile*) four samples were listed but only two for *O. parasiticum*. *Odontidium harrisonii* and *O. mutabile* were subsequently transferred to the genus *Staurosirella* as *S. harrisonii* (W.Smith) E.Morales & C.E.Wetzel (in Morales & al. 2015: 468) and *S. mutabilis* (W.Smith) E.Morales & Van de Vijver (in Morales & al. 2015: 468). *Odontidium tabellaria* was already transferred by Leuduger-Fortmorel in 1878 to the genus *Staurosira* as *S. tabellaria* (W.Smith) Leuduger-Fortmorel (1878: 179) whereas *O. parasiticum* had been transferred by Morales in 2003 to the genus *Pseudostaurosira* as *P. parasitica* (W.Smith) E.Morales (2003: 287).

Recent (unpublished) analysis of all *Odontidium* samples showed that not all samples contained the same species (Van de Vijver, unpubl. data), indicating that the syntypes included more than one, often almost identical but still distinct, taxa. Therefore, lectotypes will be selected among the syntypes and designated here for each of the four species.

Staurosirella harrisonii (W.Smith) E.Morales & C.E.Wetzel (in Morales & al. 2015: 468) (Figs 1–6)

Basionym: *Odontidium harrisonii* W.Smith *A synopsis of the British Diatomaceae*, 18, pl. LX[60]: fig. 373, 1856.

Lectotype (here designated): slide BR-4685 (**BR**, Meise Botanic Garden); near Hull, coll. date 15.I.1854, leg. Mr. Harrison. The lectotype is represented by Fig. 3.

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Staurosira tabellaria (W.Smith) Leuduger-Fortmorel (1878: 179) (Figs 7–14)

Basionym: *Odontidium tabellaria* W.Smith *A synopsis of the British Diatomaceae*, 17, pl. XXXIV[34]: fig. 291, 1856.

Lectotype (here designated): slide BR-4686 (**BR**, Meise Botanic Garden); Ormesby, Norfolk, coll. date 10.IV.1853, leg. Mr. Bridgeman. The lectotype is represented by Fig. 10.

Registration: www.phycobank.org/103032

Staurosirella mutabilis (W.Smith) E.Morales & Van de Vijver (in Morales & al. 2015: 468) (Figs 15–22)

Basionym: *Odontidium mutabile* W.Smith *A synopsis of the British Diatomaceae*, 17, pl. XXXIV[34]: fig. 290, 1856.

Lectotype (here designated): slide BR-4687 (**BR**, Meise Botanic Garden); Plumpton, Sussex, coll. date III.1852. The lectotype is represented by Fig. 18.

Registration: www.phycobank.org/103033

Pseudostaurosira parasitica (W.Smith) E.Morales (2003: 287) (Figs 23–29)

Basionym: *Odontidium parasiticum* W.Smith *A synopsis of the British Diatomaceae*, 19, pl. LX[60]: fig. 375, 1856.

Lectotype (here designated): slide BR-4688 (**BR**, Meise Botanic Garden); Queen's Park [now generally known as Holyrood Park], Edinburgh, coll. date 19.VII.1854, leg. Dr. [R.K.] Greville. The lectotype is represented by Fig. 27.

Registration: www.phycobank.org/103034

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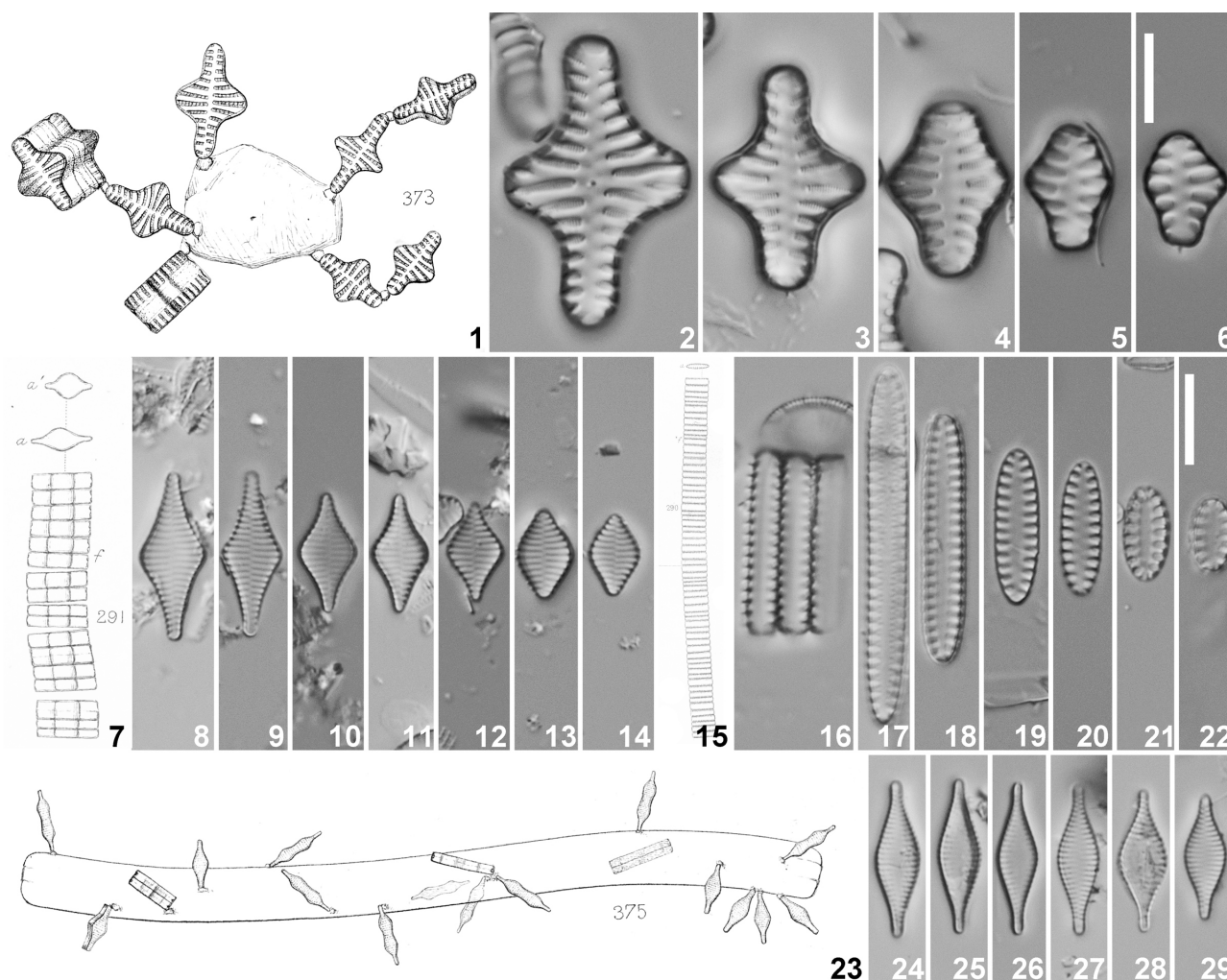
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Figures 1–29. Four (former) *Odontidium* species described in Smith (1856). Original drawings and LM pictures taken from the lectotype material. **Fig. 1.** Original drawing of *Odontidium harrisonii* W.Smith 1856: pl. LX: fig. 373 [= *Staurosirella harrisonii* (W.Smith) E.Morales & C.E.Wetzel in Morales & al. 2015]. **Figs 2–6.** Five valves in decreasing length series of *Staurosirella harrisonii*. **Fig. 7.** Original drawing of *Odontidium tabellaria* W.Smith 1856: pl. XXXIV: fig. 291 [= *Staurosira tabellaria* (W.Smith) Leuduger-Fortmorel 1878]. **Figs 8–14.** Seven valves in decreasing length series of *Staurosira tabellaria*. **Fig. 15.** Original drawing of *Odontidium mutabile* W.Smith 1856: pl. XXXIV: fig. 290 [= *Staurosirella mutabilis* (W.Smith) E.Morales & Van de Vijver in Morales & al. 2015]. **Figs 16–22.** Colony and six valves in decreasing length series of *Staurosirella mutabilis*. **Fig. 23.** Original drawing of *Odontidium parasiticum* W.Smith 1856: pl. LX: fig. 375 [= *Pseudostaurosira parasitica* (W.Smith) E.Morales 2003]. **Figs 24–29.** Six valves in decreasing length series of *Pseudostaurosira parasitica*. Scale bars represent 10 µm. Original drawings not represented on the same scale.