

Re-designation of Seventeen Lectotypes for Diatoms (*Bacillariophyceae*), Originally Designated by Ohtsuka & Tuji (2002), Tuji (2002) and Tuji (2004)

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Abstract Seventeen lectotypes of diatoms, which were originally designated by Ohtsuka & Tuji (2002), Tuji (2002) and Tuji (2004), are re-designated in this paper. Because of lacking the phrase “here designated” (*hic designatus*) or an equivalent in the typification statements, these original designations are invalid under International Code for Botanical Nomenclature (ICBN: Saint Louis Code) Art. 7.11.

Key words: Lectotype, *Caloneis nipponica* Skvortzov, *Coconeis disculus* var. *nipponica* Skvortzov, *Cymbella nipponica* Skvortzov Skvortzov, *Cymbella turgidula* var. *nipponica* Skvortzov, *Gomphonema lingulatum* var. *elongatum* Skvortzov, *Navicula costulata* var. *tenuirostris* Skvortzov, *Navicula gastrum* fo. *nipponica* Skvortzov, *Navicula hasta* var. *gracilis* Skvortzov, *Navicula lambda* var. *nipponica* Skvortzov, *Navicula lanceolata* var. *nipponica* Skvortzov, *Navicula radiosa* fo. *nipponica* Skvortzov, *Navicula rostellata* var. *biwaensis* Skvortzov, *Navicula similis* var. *nipponica* Skvortzov, *Navicula undulate* Skvortzov, *Melosira solida* var. *nipponica* Skvortzov, *Fragilaria rhabdosoma* Ehrenb., *Fragilaria sepes* Ehrenb.

Introduction

Designations for diatoms by Ohtsuka & Tuji (2002), Tuji (2002) and Tuji (2004) are invalid under International Code of Botanical Nomenclature (ICBN, Saint Louis Code: Greuter et al. 2000), Art. 7.11., because of lacking the phrase “here designated” (*hic designatus*) or an equivalent in the typification statements. In this paper, we re-designate these lectotypes.

Designation

***Caloneis nipponica* Skvortzov**, Philipp. J. Sci. 6: 267. pl. 2, f. 7, pl. 3, f. 9, pl. 4, f. 15. 1836; Ohtsuka & Tuji, Phycol. Res. 50: 244. f. 1–2. 2002.
Lectotype (designated here): Slide 30000136, Lake Biwa Museum, Japan.
Isolectotype (isotype raw material): TNS-AL-

53965m in TNS (Department of Botany, National Science Museum, Tokyo).

***Coconeis disculus* var. *nipponica* Skvortzov**, Philipp. J. Sci. 6: 262. pl. 4, f. 16. 1836; Ohtsuka & Tuji, Phycol. Res. 50: 244. f. 3–4. 2002.

Lectotype (designated here): Slide 30000142, Lake Biwa Museum, Japan.

Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).

***Cymbella nipponica* Skvortzov**, Philipp. J. Sci. 6: 283–4. pl. 5, f. 20, 23. 1836; Ohtsuka & Tuji, Phycol. Res. 50: 245. f. 5–6. 2002.

Lectotype (designated here): Slide 30000144, Lake Biwa Museum, Japan.

Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).

***Cymbella turgidula* var. *nipponica* Skvortzov**, Philipp. J. Sci. 6: 283. pl. 2, f. 8, pl. 4, f. 4.

- 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 245. *f.* 7–8. 2002.
 Lectotype (designated here): Slide 30000136, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Gomphonema lingulatum* var. *elongatum* Skvortzov**, *Philipp. J. Sci.* **6**: 286. *pl.* 3, *f.* 11. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 246. *f.* 9–10. 2002.
 Lectotype (designated here): Slide 30000143, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula costulata* var. *tenuirostris* Skvortzov**, *Philipp. J. Sci.* **6**: 273. *pl.* 5, *f.* 16. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 246. *f.* 11–12. 2002.
 Lectotype (designated here): Slide 30000140, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula gastrum* fo. *nipponica* Skvortzov**, *Philipp. J. Sci.* **6**: 274. *pl.* 8, *f.* 8. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 246. *f.* 13. 2002.
 Lectotype (designated here): Slide 30000144, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula hasta* var. *gracilis* Skvortzov**, *Philipp. J. Sci.* **6**: 275. *pl.* 7, *f.* 9. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 246. *f.* 14–16. 2002.
 Lectotype (designated here): Slide 30000136, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula lambda* var. *nipponica* Skvortzov**, *Philipp. J. Sci.* **6**: 271. *pl.* 6, *f.* 15. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 246. *f.* 17. 2002.
 Lectotype (designated here): Slide 30000130, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula lanceolata* var. *nipponica* Skvortzov**, *Philipp. J. Sci.* **6**: 274. *pl.* 2, *f.* 18, *pl.* 7, *f.* 5. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 247. *f.* 20. 2002.
 Lectotype (designated here): Slide 30000140, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula radiosa* fo. *nipponica* Skvortzov**, *Philipp. J. Sci.* **6**: 273. *pl.* 2, *f.* 2, *pl.* 3, *f.* 20. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 247. *f.* 22–23. 2002.
 Lectotype (designated here): Slide 30000143, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula rostellata* var. *biwaensis* Skvortzov**, *Philipp. J. Sci.* **6**: 272. *pl.* 3, *f.* 14. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 248. *f.* 24–25. 2002.
 Lectotype (designated here): Slide 30000136, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula similis* var. *nipponica* Skvortzov**, *Philipp. J. Sci.* **6**: 276. *pl.* 3, *f.* 2. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 249. *f.* 26. 2002.
 Lectotype (designated here): Slide 30000141, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).
- Navicula undulate* Skvortzov**, *Philipp. J. Sci.* **6**: 275. *pl.* 4, *f.* 2, *pl.* 7, *f.* 6. 1836; Ohtsuka & Tuji, *Phycol. Res.* **50**: 249. *f.* 28–29. 2002.
 Lectotype (designated here): Slide 30000141, Lake Biwa Museum, Japan.
 Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).

***Melosira solida* var. *nipponica* Skvortzov**, Philipp. J. Sci. **6**: 255. *pl. 1, f. 1, 2, 21*. 1836; Tuji, Phycol. Res. **50**: 315. *f. 19–25*. 2002.

Lectotype (designated here): A individual in a slide TNS-AL-53965s in TNS (Department of Botany, National Science Museum, Tokyo). The photograph is shown at figure 22 in Tuji (2002).

Isolectotype (isotype raw material): TNS-AL-53965m in TNS (Department of Botany, National Science Museum, Tokyo).

***Fragilaria rhabdosoma* Ehrenb.**, Abh. K. Akad. Wiss. Berlin. 1833: 249, 1835; Tuji, 17th Int. Diat. Symp. 2002: 415. *f. 19–28*.

Lectotype (designated here): BHUPM.MB. ECO-004 in BHUPM (Museum für Naturkunde in Berlin).

Isolectotype (raw material): EC sample 2533 in BHUPM (Museum für Naturkunde in Berlin).

Isolectotype (slide): TNS-AL-56153s in TNS (Department of Botany, National Science Museum, Tokyo).

***Fragilaria sepes* Ehrenb.**, Mikrogeologie *pl. 37/1, f. 8*. 1854; Tuji, 17th Int. Diat. Symp. 2002: 419. *f. 34–43*.

Lectotype (designated here): BHUPM.MB. ECO-005 in BHUPM (Museum für

Naturkunde in Berlin).

Isolectotype (isotype raw material): EC sample 2871 in BHUPM (Museum für Naturkunde in Berlin).

Isolectotype (isotype) (slide): TNS-AL-56154s in TNS (Department of Botany, National Science Museum, Tokyo).

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