

Nos. 001

R. Arakawa, Saitama Pref., Japan.

[35°56'48.9" N, 138°56'00.0" E]

Electric conductivity (EC: $\mu\text{s}/\text{cm}$): 77, pH: 7.9, Water temperature (WT: $^{\circ}\text{C}$): 9.5.

Date: 25/xi/2004.

Coll. A. Tuji (duplicate of TNS-AL-54241m in TNS).

Isotype specimen of *Gomphoneis okunoi* Tuji.

Gomphoneis okunoi Tuji, Bull. Natn. Sci. Mus. Tokyo ser. B. **31**: 92-95. *pl. 12. f. 1-10. pl. 13. f. 1-4. pl. 14. f. 1-5.* 2005.

(Figs 1-3)

Synonym: *Gomphonema tetrastigmatum* sensu Okuno, Diat. Elektr. Mikr. **9**: 36-37. 1974.

Gomphoneis tetrastigmata sensu T.Ohtsuka, Diat. **18**: 32. *f. 77-80.* 2002.

Holotype: A slide numbered TNS-AL-54241sc in TNS.

Type material: TNS-AL-54241m in TNS collected from R. Arakawa by A. Tuji on 25th November, 2004.

Isotype: BM101269 in BM, CAS221093 in CAS.

Ecology: Commonly found in less polluted rivers and lakes (xenosaprobic to oligosaprobic in saprobic level) and regarded as saproxenous taxon and prefers low temperatures (Tuji 2005). pH-circumneutral.

Nitzschia dissipata (Kütz.) Rabenh. Alg. sachs. 948. 1860.

(Figs 4-5)

Ecology: saproxenous, alkaliphilous, cosmopolitan.

Nitzschia inconspicua Grunow, Verh. K. Zool.-Bot. Ges. Wien **12**: 579. *pl. 12. f. 25.* 1862.

(Fig. 6)

Ecology: indifferent, alkaliphilous.

Reimeria sinuata (W.Greg.) Kociolek et Stoermer, Syst. Bot. **12**: 457. 1987.

(Fig. 7)

Ecology: saproxenous, pH-circumneutral.

Nitzshia fonticola (Grunow) Grunow in Van Heurck, Syn. Diat. Belg. *pl. lxxix, f. 15-20.* 1881.

(Figs 8-9)

Ecology: indifferent, alkaliphilous.

Gomphonema parvulum (Kütz.) Kütz., Sp. alg. 65. 1849.

(Fig. 10)

Ecology: indifferent, alkaliphilous, cosmopolitan.

Hannaea arcus var. *recta* (Cleve) M.Idei in H.Kobayasi et al., H.Kobayasi's Atlas Jap. Diat. Electr. Microsc. **1**: 12. 2006.

≡ *Fragilaria arcus* var. *recta* Cleve, Bih. Kongl. Svenska Vet.-Akad. Handl. **24**: 9. 1898.

(Fig. 11)

Fragilaria gracilis Østrup, Danske Diat. 190. pl. V. f. 117. 1910.

(Fig. 12)

Lectotype: slide 1342 in C, designated by Lange-Bertalot in Krammer and Lange-Bertalot,

Süßw.-flora Mitteleur. **2/2**: taf. 110. f. 9-11. 1991.

Isotype (raw material): 352.1 in the Østrup collection housed in C.

Type locality: A basin in the Botanical garden, Kopenhagen.

Type examination using LM & SEM: Tuji, Bull. Natl. Mus. Nat. Sci. Tokyo ser. B. **33**: 9-12. f. 1-8. 2007.

Ecology: saproxenous, alkaliphilous.

Achnantheidium japonicum (H.Kobayasi) H.Kobayasi, Nova Hedw. **65**: 156. 1997.

≡ *Achnanthes japonica* H.Kobayasi in H.Kobayasi et al. Diat. **2**: 85-86. f. 19-21, 27-36, 44-50, 55-58. 1986.

(Figs 13-16)

Ecology: saproxenous, pH-circumneutral.

Achnantheidium pyrenaicum (Hust.) H.Kobayasi, Nova Hedw. **65**: 148. 1997.

≡ *Achnanthes pyrenaica* Hust., Ber. Deutsch. Bot. Ges. **56**: 554. f. 5-10. 1939.

Holotype: 397/18. Gave d'Ossau. Pyrenäen. 2, examined by Simonsen, Atlas Cat. Diat. Typ. Fr. Hust. **2**: pl. 371. f. 9-17. 1987.

(Figs 17-24)

