

New combinations in *Pteromonas carteri* P.M.Tsarenko & Kapustin (*Phacotaceae*, *Chlorophyceae*) with comments on two infraspecific taxa of *P. angulosa* (H.J.Carter) Lemmermann 1900, *nom. illeg.* described by Skvortzov

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In 2011, Tsarenko & Kapustin proposed the designation “*Pteromonas carteri* P.M.Tsarenko & Kapustin” as a *nomen novum* for *Pteromonas angulosa* (H.J.Carter) Lemmermann 1900, *nom. illeg.* (Massjuk & al. 2011: 214). This species was originally described from freshwater tanks in the island of Bombay [now Mumbai, Maharashtra, India] as *Cryptomonas angulosa* (Carter 1859) and later transferred to *Pteromonas* Seligo by Lemmermann (1900). However, the name *Pteromonas angulosa* had already been introduced by Chodat (1896: 278), giving that name priority. Here we propose a nomenclatural revision of its infraspecific taxon names in accordance with ICN Art. 41 (Turland & al. 2025).

Pteromonas carteri P.M.Tsarenko & Kapustin in Massjuk & al. *Chlamydomonadales*. In: *Algae of Ukraine* 3: 214. 2011.

Replaced synonym: *Cryptoglana angulosa* H.J.Carter *Annals and Magazine of Natural History*, series 3, 3(12): 18, pl. I: fig. 18a-c, 1859.

Synonyms: *Phacotus angulosus* (H.J.Carter) Stein 1878: 142 [source of synonymy (Massjuk & al. 2011)].

Pteromonas alata (Cohn) Seligo 1886: 170 [source of synonymy (Massjuk & al. 2011)].

Pteromonas angulosa (H.J.Carter) Lemmermann 1900: 29, *nom. illeg.*, non *Pteromonas angulosa* Chodat 1896 [source of synonymy (Massjuk & al. 2011)].

Pteromonas takedana G.S.West 1916: 8, fig. 6; *Pteromonas angulosa* var. *takedana* (G.S.West) Pascher 1927: 366 (as *Pteromonas angulosa* Lemmermann var. *takedana* (G.S.West) Pascher) [as synonyms of *Pteromonas angulosa* (H.J. Carter) Lemmermann, source of synonymy (Pentecost 2005, 2011)].

Note: Lemmermann (1900: 94) proposed a superfluous new name, *Pteromonas chodatii* Lemmermann, *nom. illeg.* for *Pteromonas angulosa* Chodat (1896: 278, fig. 30).

Pteromonas carteri* var. *australis* (Playfair) Levanets & Janse van Vuuren, *comb. nov.

Basionym: *Pteromonas alata* var. *australis* Playfair *Proceedings of the Linnean Society of New South Wales* 40(Part II, No. 158): 335, pl. XLII [42]: fig. 14, 1915.

Homotypic synonym: *Pteromonas angulosa* var. *australis* (Playfair) Playfair 1918: 522.

Type locality: Australia: New South Wales, Lismore, rainwater pools in Conway Street.

Registration: <http://phycobank.org/105860>.

Note: Playfair (1918: 522) commented: “*Pteromonas alata* Seligo, is a synonym, it appears, of *P. angulosa* (Carter) Dang. (*Cryptoglana angulosa* Carter)”.

Pteromonas carteri* var. *alatus* (F.Stein) Levanets & Janse van Vuuren, *comb. nov.

Basionym: *Chlamydococcus alatus* F.Stein *Der Organismus der Infusionsthierie III*: pl. XV [15]: figs 55-57, 1878

Type locality: “Europa”.

Registration: <http://phycobank.org/105861>.

Note: *Pteromonas cordiformis* Lemmermann (1900: 93) included “*Chlamydococcus alatus* F.Stein 1878, *Organismus der Infusionsthierie III*, Taf. XV, Fig. 56 (*nomen nudum, sine diagnosis*)” but

this name is validated by the illustrations according to Art. 38.7 “For the purpose of Art. 38.5, prior to 1 January 1908, an illustration with analysis (see Art. 38.9 and 38.10) is acceptable in place of a written description or diagnosis”. Thus, the name *Pteromonas cordiformis* Lemmermann appears to be illegitimate as an earlier, valid name was included in synonymy (Guiry & Guiry 2025). “*Pteromonas cordiformis* Lemmermann emend. Fott (1957: fig. 7: 4-7)” also included “*Chlamydococcus alatus* F.Stein” and therefore is also an illegitimate name (as well as *Pteromonas angulosa* var. *cordiformis* (Lemmermann) Philipose 1958: 302).

Pteromonas carteri* var. *elongata (Skvortzov) Levanets & Janse van Vuuren, *comb. nov.*

Basionym: *Pteromonas angulosa* var. *elongata* Skvortzov *Archiv für Protistenkunde* 66(1): 163, fig. 10, 1929.

Type locality: North Manchuria [China], vicinity of Ertzendziandze, stagnant water, leg. B. Skvortzov, 1927.

Registration: <http://phycobank.org/105862>.

Note: In Skvortzov (1929) an exact location is given as station Ertzendziandze [in Skvortzov (1958) as “Ertientziantze”]. This is a railway station on former Chinese Eastern Railway (Chinese: 中國東省鐵路, Russian: Китайско-Восточная железная дорога – КВЖД). Another name for this station/village is Yuquan (Russian: Эрцэндяньцзы or Юйцюань, Chinese: 玉泉), now Yuejicun, Acheng District, Harbin, Heilongjiang, China.

Pteromonas carteri* var. *scutiformis (Playfair) Levanets & Janse van Vuuren, *comb. nov.*

Basionym: *Pteromonas angulosa* var. *scutiformis* Playfair *Proceedings of the Linnean Society of New South Wales* 43: 522, Pl. LV [55]: fig. 29, 1918.

Type locality: “Lismore (344)” [New South Wales, Australia].

Registration: <http://phycobank.org/105863>.

Pteromonas carteri* var. *campariformis (H.J.Hu & S.Chen) Levanets & Janse van Vuuren, *comb. nov.*

Basionym: *Pteromonas golenkiniana* var. *campariformis* H.J.Hu & S.Chen [in Chen & Hu] *Journal of Wuhan Botanical Research* 21(6): 494, figs. 2-4, 2003.

Incorrect designation: “*Pteromonas angulosa* var. *triangulates*” [sic] H.J.Hu & S.Chen in Hu & Wei 2006: 567.

Type locality: Sichuan Province, Chengdu, Zoo Waterfowl Lake [China], stagnant water, water temp. 15°C, pH 6.5, leg. Chen Shan, Luo Liming, Hu Hongjun. Specimen number WCD200022, deposited in the Algae Laboratory of Wuhan Institute of Botany, Chinese Academy of Sciences.

Registration: <http://phycobank.org/105864>.

Note: “*Pteromonas angulosa* var. *triangulates* H.J.Hu & S.Chen” appears to be a “lapsus” since it does not indicate of intention to change the name on the part of the authors.

Along with *Pteromonas angulosa* var. *elongata*, Boris Vassilievich Skvortzov (1896–1980) also described two further varieties of the same species, namely *P. angulosa* var. *incurva* and *P. angulosa* var. *obtusa* (Skvortzov 1929: 163) from the same location near Harbin in Northern Manchuria. Later they were raised to the species level by the same author (Skvortzov 1957). Here we draw attention on Skvortzov’s (1967) article where both taxa were given illegitimate names (same or new, respectively).

Pteromonas incurva (Skvortzov) Skvortzov *Philippine Journal of Science* 86(2): 160, pl. 2: fig. 43, 1957.

Basionym: *Pteromonas angulosa* var. *incurva* Skvortzov *Archiv für Protistenkunde* 66(1): 163, fig. 12, 1929 (as *Pteromonas angulosa* Lemmermann var. *incurva*). Later with full repetition of

basionym, description, locality and illustration this name was published again as *Pteromonas incurva* (Skvortzov) Skvortzov, *The Bulletin of Japanese Society of Phycology* 15(2): 82 (key), 85, pl. 1: fig. 5, 1967, *nov. nom.*

Note: In Skvortzov (1957) the type location was indicated as “Ertientziantze”.

Pteromonas obtusa (Skvortzov) Skvortzov *Philippine Journal of Science* 86(2): 159, pl. 2: fig. 42, 1957.

Basionym: *Pteromonas angulosa* var. *obtusata* Skvortzov *Archiv für Protistenkunde* 66(1): 163, fig. 11, 1929 (as *Pteromonas angulosa* Lemmermann var. *obtusata*). Later with full repetition of the basionym, description, locality and illustration this taxon was published under a new name (“*nom. nov.*”), namely *Pteromonas obtusata* Skvortzov in *The Bulletin of Japanese Society of Phycology* 15(2): 82 (key), 85, 1967, *nom. illeg.* (superfluous name). It is very likely that “*P. obtusata*” is a misprint, since in caption to pl. I: fig. 3 in Skvortzov (1967) is listed as “*P. obtusa*”.

Note: In Skvortzov (1957) the type location was indicated as “Ertientziantze”, in Skvortzov (1967) – “in a lake plankton in the valley of the Sungari River near Harbin, Northern Manchuria, China”.

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