

Bysmatrum biechelerae Haifeng Gu & K.N.Mertens, *sp. nov.* (*Peridiniales, familia incertae sedis, Dinophyceae*)

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The designation “*Bysmatrum sociale*” was proposed recently (Gu & al. 2024: 496) citing “*Glenodinium* sp. nov. Henneguy (1890)” [sic] as the supposed basionym. The designation “*Glenodinium sociale*” was originally introduced based upon material “...dans les marais salants du Croisic” [Le Croisic, Loire-Atlantique, Atlantic France], France by Henneguy (1890: 627). However, Henneguy did not provide an illustration and expressed uncertainty (“Si le Péridinien constitue une nouvelle espèce, on pourrait le désigner sous le nom de *Glenodinium sociale*”), rendering his name invalid under ICN Art. 36.1 (Turland & al. 2018). Subsequently, Labbé (1924: 468, fig. IX) rediscovered the species at the same locality and illustrated it, but this does not validate the designation either as no description was provided: post-1 January 1908 an illustration cannot serve to validate a name (Art. 38.7). Biecheler (1952: 59, fig. XXXIII: 1, 2, XXXIV, XXXV) inadvertently validated the name *Peridinium sociale* [as “*Peridinium sociale* (Henneguy)”] with a description in French and provided excellent illustrations. A Latin description or diagnosis was not required for living algae prior to 1 January 1958 (Art. 44.1). However, *Peridinium sociale* Biecheler, while valid, is illegitimate as it included an earlier valid and legitimate name in synonymy, *Peridinium subsalsum* Ostenfeld, 1908, the basionym of the type of *Bysmatrum* described from Nicolaus I Island, a former island in the Aral Sea, and *Peridinium sociale* is therefore a superfluous illegitimate name for the type of the name of the genus. Biecheler’s (1952) specimens measure 45–60 µm in length. *Bysmatrum subsalsum* was originally described by Ostenfeld (1908) with a length of 40–46 µm and a width of 38–44 µm.

Anglès & al. (2017: 845) demonstrated the presence of cryptic species within the *Bysmatrum subsalsum* complex: a ribotype from the La Pletera salt marshes on the Catalan coast of Spain and Corru S’Ittiri Lagoon, Sardinia, measuring 22–50 µm in length and a ribotype from Fangar Bay also on the Catalan coast measuring 21–45 µm in length. They suggested the possibility that the first ribotype might correspond to Biecheler’s species. Pending further molecular studies from the type locality of Biecheler’s species and *B. subsalsum sensu stricto* from the Aral Sea, we propose a new name for Biecheler’s species as follows.

Bysmatrum biechelerae Haifeng Gu & K.N.Mertens, *sp. nov.*

Synonym: *Peridinium sociale* Biecheler, 1952, p. 59, figs XXXIII–XXXV, *nom. illeg.*

Holotype (*icon!*): Biecheler (1952: fig. XXXIV, illustrating the plate tabulation).

Type locality: Étang de Thau, Occitania, Mediterranean France.

Description: Thecate dinoflagellate with a pentagonal cell-shape, 45–60 µm in length. Yellow-green elongate chloroplasts. Eyespot present. Hypothecal, sausage-shaped nucleus. Reticulated thecal plates. Growth bands can be present. Trapezoidal shape of apical pore complex. Kofoidian plate formula is Po, X, 4', 3a, 7'', ?C, ?S, 5''', 2'''. Second anterior intercalary plate does not contact third anterior intercalary plate, as for the genus. First anterior intercalary plate quadrangular, second anterior intercalary plate hexagonal, and third anterior intercalary plate pentagonal. Two to three antapical spines present on 1''', 5''', 2'''. Cingular displacement 1.5–2.0. Sulcus widens towards the antapex. Based upon Biecheler (1952: 59–63).



Etymology: named for Berthe Biecheler (1901–1939) of the Station Biologique de l'Université de Montpellier à Sète, France; see Moestrup & Enevoldsen (2019) for an account of her life and premature demise. Her thesis work was published posthumously in 1952 (Biecheler, 1952).

Registration: <http://phycobank.org/105199>

The authors wish to thank Michael Guiry and an anonymous reviewer for their helpful comments that improved the manuscript.

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