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Two new species of monoraphid diatom (Bacillariophyceae) from South of China

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Abstract

Two new monoraphid diatoms, *Psammothidium hainanii* Kociolek & Liu sp. nov. and *Platessa guagnzhouae* Liu & Kociolek sp. nov., are described. Both species were collected from southern China, from Hainan and Guangzhou province, respectively. *Psammothidium hainanii* is distinguished from other species by its unique outline and rectangular central area on the rapheless valve. *Platessa guangzhouae* has uniseriate areolae in both valves, similar to some *Psammothidium* species, but it also has features of a flat valve, terminal raphe fissures lacking, a hyaline ring round the margin, and one areola at the end of each stria. Based on these features we have placed it in the genus *Platessa*. The bow-tie shaped central area on the raphe valve and uniseriate areolae on the rapheless valve help to separate it from other *Platessa* species.

Key words: *Psammothidium*, *Platessa*, Bacillariophyceae, monoraphid, diatom, China, new species

Introduction

The diatom genus *Psammothidium* was established by Bukhtiyarova & Round (1996: 3) and based on *Psammothidium marginulatum* (Grunow) Bukhtiyarova & Round (1996: 3) (basionym: *Achnanthes marginulata* Grunow in Cleve & Grunow 1880: 21). It was characterized by its convex raphe valve and concave rapheless valve; their areolae are poriod and small, closed by cribra internally; both valves have areolae that are similarly structured; the raphe fissures lie in channels; and the central pores and terminal fissures are well-developed. The sternum of the rapheless and the raphe valve can be alike or dissimilar (Bukhtiyarova & Round 1996). So far c. 50 taxa have been assigned to the genus (Fourtanier & Kociolek 2011, Enache *et al*. 2013).

Platessa was established by Lange-Bertalot (2004: 442) and characterized as having nearly flat valves, a straight raphe without differentiated terminal fissures, uni- to multiseriate, (but mostly biseriate) striae (Potapova 2012) and, in the light microscope, the valves appear to have a hyaline ring at the periphery of the raphe valve (Krammer & Lange-Bertalot 2004). So far c.15 taxa have been assigned to this genus (Fourtanier & Kociolek 2011, Potapova 2012, Enache *et al*. 2014).

Psammothidium is distinguished from *Platessa* by the convex raphe valve, uniseriate striae and variable terminal fissures (Bukhtiyarova & Round 1996).

The first report of monoraphid diatoms from China was published by Petit (1880). 130 years later more than 100 taxa have been recorded (Liu *et al.* submitted). Despite this long period of research on the group from China, there are still several areas with few records of monoraphid diatoms, such as Guangdong and Hainan provinces. In this paper we present light and scanning electron microscope observations for two distinctive monoraphid diatoms from Guangdong and Hainan Provinces, both described here as new species.

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