



## *Achnantheidium palmeti* (Bacillariophyta, Achnanthidiaceae), a new freshwater species from Réunion Island

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### Abstract

Recent survey of the epilithic diatoms in the running waters of Réunion Island led to the discovery of a new species of *Achnantheidium*. *Achnantheidium palmeti* sp. nov. belongs to the group of *Achnantheidium* taxa with terminal raphe fissures curved to the same side of the valve. The new species differs from other taxa in this group by a higher stria density and the areolae morphology along the axial area; moreover, apart from *Achnantheidium latecephalum* H. Kobayasi, *A. palmeti* sp. nov. is the only species having raphe vestiges. The new species was found in oligotrophic waters with very low conductivity and circumneutral pH.

### Introduction

The family of Achnanthidiaceae D.G.Mann in F.E. Round *et al.* (1990: 128) was proposed by Mann and included the genera *Achnantheidium* F.T. Kützing (1844: 75) and *Eucoconeis* P.T. Cleve ex F. Meister (1912: 95). Later *Achnantheidium* has been split into several new genera such as *Psammothidium* L. Bukhtiyarova & F.E. Round (1996: 3), *Rossithidium* F.E. Round & L. Bukhtiyarova (1996: 350), *Planothidium* F.E. Round & L. Bukhtiyarova (1996: 351), *Karayevia* F.E. Round & L. Bukhtiyarova ex F.E. Round (1998: 181), *Kolbesia* F.E. Round & L. Bukhtiyarova ex F.E. Round (1998: 181), *Lemnicola* F.E. Round & P.W. Basson (1997: 77) and *Pauliella* F.E. Round & P.W. Basson (1997: 77), and finally *Platessa* H. Lange-Bertalot in Krammer & Lange-Bertalot (2004: 442). Round and Bukhtiyarova (1996) emended the diagnosis of the genus *Achnantheidium* considering morphological aspects as linear-lanceolate to lanceolate-elliptical valve outline, striae uniseriate wider spaced in the centre or sometimes absent, valve mantle with a row of slightly elongate areolae, raphe with straight ("A. minutissimum group") or curved ("A. pyrenaicum group") distal endings and frustules in girdle view shallow-V-shaped. In order to implement a diatom index to assess the biological quality of the running waters, a survey of the epilithic diatoms was carried out on the rivers of Réunion Island. A new species, *Achnantheidium palmeti*, belonging to the "A. pyrenaicum group" (Kobayasi 1997) was discovered. Particularly in LM, the new species shows some similarities not only with a few species belonging to the "A. pyrenaicum group" but also a few ones of the "A. minutissimum group". The "A. pyrenaicum group" includes around 17 freshwater species. Seven species have been described during the last decade : *A. pfisteri* Lange-Bertalot in Werum & Lange-Bertalot (2004: 126), *A. rivulare* Potapova & Ponader (2004: 36), *A. temniskovae* Ivanov & Ector (2006: 148), *A. druartii* Rimet & Couté in Rimet *et al.* (2010: 188), *A. chitrakootense* A.Z. Wojtal, H. Lange-Bertalot & P. Nautiyal in Wojtal *et al.* (2010: 58), *A. rostroyrenaicum* Jüttner & E.J. Cox in Jüttner *et al.* (2011: 49), *A. delmontii* Pérès, Le Cohu & Barthès in Pérès *et al.* (2012: 190). So far, the freshwater diatoms of Réunion Island are only known through few papers with description of the following new species: