

## MORPHOLOGICAL DIVERSITY WITHIN THE *ACHNANTHIDIUM MINUTISSIMUM* SPECIES COMPLEX

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During a survey of benthic diatoms sampled in watercourses from Mainland Portugal, several *Achnantheidium* populations morphologically ascribable to the *A. minutissimum* complex have been found. They clearly belong to the genus *Achnantheidium* on the basis of the valve outline, radiate striae, uniseriate, wider spaced striae in the centre of the valve and cells shallow-V-shaped in girdle view. The raphe valve has a straight central raphe hardly expanding at the centre and a row of elongated areolae in the mantle. Within the genus *Achnantheidium* these morphotypes belong to the complex of *A. minutissimum* (Kützing) Czarnecki, due to their straight terminal raphe fissures, in opposition to the species with terminal raphe fissures clearly deflected on the same side of the valve.

Since these individuals were abundant in numerous sites, especially in the Centre and North of Portugal, a more detailed examination was performed by means of light (LM) and scanning electron microscopy (SEM). Furthermore, the examination of the environmental characteristics of the sites where they have been sampled allowed us to gather sufficient information on the ecological preferences of the different taxa.

The main features that allow the separation of these taxa among each other and from all the other known *Achnantheidium* species are the different valve outline and dimensions, the size and shape of the central area, the apices shape and the density of the striae throughout the valve and near the apices.

The LM and SEM analyses of the type materials of *Achnantheidium microcephalum* Kützing, *Achnanthes minutissima* Kützing and *A. minutissima* var. *cryptocephala* Grunow in Van Heurck have been done in order to help to clarify the taxonomy of this group. A comparison with the literature on *Achnantheidium minutissimum* species complex was performed, but the new Portuguese *Achnantheidium* taxa present a set of distinct morphological and ecological features that separate them well from all other similar species. Furthermore, two of these taxa have already been recorded from French watercourses with similar environmental characteristics.