



## Lectotypification, emended description and distribution of *Planothidium distinctum* (Achnanthesiaceae, Bacillariophyceae)

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### Abstract

The rare boreo-alpine, oligotraphenic diatom *Planothidium distinctum* (= *Achnanthes distincta*) was first described from the western Alps in 1954. *Achnanthes hirta*, a species described in 1970 from the Pyrenees, is regarded as a heterotypic synonym of *Planothidium distinctum* but almost all morphological details of *P. distinctum* are known from the type material of *Achnanthes hirta*. On the basis of reinvestigation of original samples typification and emended description of *P. distinctum* were carried out by means of LM and SEM. This study extends the distribution of *P. distinctum* to the Carpathians where occasional valves were found in the lateglacial (ca 15,000–14,000 cal yr BP) lacustrine sediment of a mountain lake (Retezat Mts, Southern Carpathians, Romania).

**Key words:** *Achnanthes*, Carpathians, oligotrophy, paleolimnology, *Planothidium*, Retezat Mountains, taxonomy

### Introduction

*Planothidium distinctum* (Messikommer) Lange-Bertalot (1999: 281) was first described by Messikommer as *Achnanthes distincta* (Messikommer 1954: 32), who found it in three samples collected in the western part of the Alps (Urner Reusstales, Switzerland) at two localities, though not in any abundance. The three samples (material squeezed from mosses overgrowing rocks in an outflow from “Lauteren Seeli”) were included in the species protologue, along with a Latin diagnosis and two drawings illustrating raphe- and rapheless valves (Messikommer 1954: 32, pl. 1, figs 2a, 2b, reproduced here as Figs 1, 2). Since the designation of type material was not obligatory before 1958 (Jahn & Kusber 2009, McNeil *et al.* 2012), the description of *Achnanthes distincta* is valid.

*Achnanthes hirta* Carter (1970: 609) was described from material collected by J. Broadhead during the summer of 1966 and 1967 in Andorra (Carter 1970, Williams & Reid 2002). A detailed description of the “well defined form” (Carter 1970: 609) included drawings of both the raphe and rapheless valves (Carter 1970: pl. 1, figs 10, 11, reproduced here as Figs 3, 4). A holotype (BM 77780) was designated from “Sample No. 2 from a ditch near Llorts” (Carter 1970, Williams & Reid 2002).

The first micrographs of *Achnanthes hirta* were published by Lange-Bertalot and Krammer in their comprehensive monograph on *Achnanthes* (Lange-Bertalot & Krammer 1989: Pl. 31, figs 2, 3; pl. 40, figs 10–17). The only remark made by Lange-Bertalot and Krammer on the morphology of *A. hirta* refers to its striae structure, which is constructed of three rows of areolae near the valve edge, reducing to two rows towards the axial area (Lange-Bertalot & Krammer 1989: 65). Their description of *A. hirta* is accompanied by twelve light microscope (LM) and two scanning electron microscope (SEM) images. Four of the LM pictures were taken