



Two new species of *Nitzschia* (Bacillariophyta) from shallow wetlands of Peninsular India

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Abstract

The majority of species belonging to the genus *Nitzschia* are distinguished by minute taxonomic features that are difficult to observe and document. Currently, geographical distributions for many species are recognized as cosmopolitan; in contrast endemic species are poorly documented and studied. Our study describes two new species of *Nitzschia* from shallow wetlands across the Bangalore urban district of peninsular India, *Nitzschia taylorii*, sp. nov. and *Nitzschia williamsi*, sp. nov. Morphological analyses of these new species were performed with light and scanning electron microscopy, and the ecology of inhabited wetlands are discussed briefly. New species records from urban polluted wetlands provide evidence for broadening taxonomic and ecological investigations of cosmopolitan genera like *Nitzschia* in the Southern Hemisphere.

Key words: Diatoms, Bangalore, Tropical wetlands, Nitzschiaceae, new species

Introduction

The freshwater diatom flora of the Indian subcontinent has been studied since the 18th century (Ehrenberg 1845, Skvortzow 1935, Gandhi 1966, 1998, Foged 1976, Sarode & Kamat 1980). Recently there have appeared a few reports of new species and new combinations from India, particularly from biodiversity hotspots like the Himalayas and Western Ghats. Some of these recently described species belong to the genera *Achnantheidium* Kützing (1844: 75; Wojtal *et al.* 2010, Jüttner *et al.* 2011), *Cymbopleura* (Krammer 1982: 20) Krammer (1999: 292; Van de Vijver *et al.* 2011), *Gomphonema* Ehrenberg (Jüttner *et al.* 2004, Karthick *et al.* 2011), *Oricymba* Jüttner, Krammer, Cox, Van de Vijver & Tuji (Jüttner *et al.* 2010: 408), *Pleurosigma* W.Smith (1852: 2; Karthick & Kociolek 2012), *Surirella* Turpin (1828: 362; Karthick *et al.* 2012) and *Pleurosira* (G. Meneghini) V.B.A. Trevisan di San Leon (1848: 96) and *Spicaticribra* J.R.Johansson, Kociolek & R.L.Lowe (2008: 368; Karthick & Kociolek 2011). Most of these studies report new taxa and combinations from samples collected in conservation reserves. In contrast, studies on the diatom floral diversity of wetlands in human dominated landscapes (anthropogenically impacted) are scarce.

In India taxa belonging to the genera *Nitzschia* Hassall (1845: 435), *Navicula* Bory de Saint-Vincent (1822: 128), *Cyclotella* (Kützing 1833: 535) de Brébisson (1838: 19) and *Diademsis* Kützing (1844: 109) are recorded as cosmopolitan, dominating impacted water bodies and thus are pollution tolerant taxa (Alakananda *et al.* 2011). The genus *Nitzschia* is less understood because of the complexity in identification and its wide ecological preferences. Members of the genus *Nitzschia* are generally recognized as cosmopolitan in distribution and many have wide species tolerances to ionic concentrations and nutrient enriched aquatic