



***Gomphonema yaominae* sp. nov. Li, a new species of diatom (Bacillariophyta) from lakes near Yangtze River, China**

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Abstract

This paper describes the new species *Gomphonema yaominae* sp. nov. from lakes in the lower reaches of Yangtze River, China. The description is based on data derived from light and scanning electron microscopy. The main features of *Gomphonema yaominae* are: lanceolate valves, which gradually taper towards the headpole and more abruptly taper from the valve centre towards the footpole; a rounded headpole; a narrowly rounded footpole; a narrow and lanceolate axial area (sternum); an undulate and distinctly lateral raphe; and radiate striae. It is common to abundant on water plants in the samples examined herein.

Key words: new species, *Gomphonema*, Lakes Shahu and Huangpi, China

Introduction

The floodplain of the middle and lower reaches of the Yangtze River (SE China) contains 561 lakes of which most have a surface area more than 1 km² (Wang & Dou 1998). The region is characterized by a sub-tropical monsoonal climate with strong seasonality (Yi *et al.* 2003), with annual precipitation ranging between 1000 and 1600 mm of which more than 70% falls between April and October (Academia Sinica 1985). Lakes in the floodplain are an important source of drinking water for millions of people but most of the lakes have been impacted by human activity for long periods (Qin *et al.* 2002). With the development of extensive agriculture, fishing, stockbreeding and urbanization during recent decades, most lakes in this area have undergone eutrophication (Shu *et al.* 1996).

Species belonging to the genus *Gomphonema* Ehrenberg (1832: 87) occur over a wide range of environmental conditions (e.g. Jüttner *et al.* 2004). Species of *Gomphonema* are found in both ultra-oligotrophic and nutrient rich or organically polluted freshwater (Fore & Grafe 2002), in water of low to high conductivity (Potapova & Charles 2003) and occur predominantly at neutral to slightly alkaline pH (Van Dam *et al.* 1994). Recently, Fan *et al.* (1998), Bao *et al.* (1992) and Li *et al.* (2002, 2003, 2004, 2006, 2007, 2010) have studied species of *Gomphonema* from China and Shi (2004) has published a monograph on the family Gomphonemaceae from China, including a number of species in the genus *Gomphonema*. However, many species remain undescribed. In this paper we describe a new species of *Gomphonema* found in Lakes Shahu and Huangpi in the lower reaches of the Yangtze River. We document its morphology as revealed by light and scanning electron microscopy.

Material and Methods

Twenty samples were collected from 10 lakes (listed in Table 1) in the lower reaches of Yangtze River, China.