



New species of *Cymbella* and *Placoneis* (Bacillariophyta) from late Pleistocene Fossil, China

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Abstract

This paper describes five new *Cymbella*, one new *Cymbopleura* and one new *Placoneis* species from the late Pleistocene of the Jiangnan Plain in China, based on light- and scanning electron microscopy of valve morphology. The characteristic morphological features of the seven new species differ from known established taxa by valve shape, both the central portion and apices, length/breadth ratio, shape of the central area and presence or absence of stigmata. All six cymbelloid taxa are as yet found only in fossil deposits of the Jiangnan Plain. The *Placoneis* species, however is apparently conspecific with an extant population observed in Northern Myanmar (Burma, Southeast Asia).

Key words: new species, *Cymbella*, *Placoneis*, fossil, China

Introduction

Jiangnan Plain is a typical flood plain located in the Central Yangtze area of China, composed of interfluvial lowlands, which become lakes or marshes after storing water. Quaternary sediments of the plain areas are the result of alternate fluvial and lacustrine conditions, and bed phase and flooded and lacustrine facies sedimentary deposits occur alternately. These deposits reflect alternating fluvial and lacustrine variances in the Jiangnan Plain over the Quaternary period (Xie 2004).

Research on the fossil diatom flora in Jiangnan Plain of China has been previously reported (Shi 1997). However, in the past 20 years revisions have continued to dominate diatom literature with more of the larger, inclusive genera being split into, presumably, more natural groupings. Recent treatments have included the genus *Cymbella* Agardh (1830:1). *Cymbella sensu lato* has been split into 11 genera: *Cymbella*, *Encyonema* Kützing (1833:589), *Pseudencyonema* Krammer (1997:156), *Encyonopsis* (1997:156), *Reimeria* Kociolek & Stoermer (1987:457), *Cymbellopsis* Krammer (1997:157), *Cymbopleura* Krammer (1999:292), *Navicymbula* Krammer (2003:123), *Delicata* Krammer (2003:118), *Gomphocymbellopsis* Krammer (2003:127), *Afrocymbella* Krammer (2003:129), *Oricymba* Jüttner *et al.* (2010:407) (Round *et al.* 1990, Krammer 1997a, b, 2002, 2003; Jüttner *et al.* 2010). In this paper, we report five new *Cymbella* species, one new *Cymbopleura*, and one new *Placoneis* Mereschkowsky (1903:15) found in Jiangnan Plain, and show their morphological features based on light microscopy.

Material and Methods

A Core was collected in 1991 from Jiangling county of Jiangnan Plain, Hubei Province (30°11'18"N,

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