



Article

***Cocconeis churalis*: a new marine diatom (Bacillariophyta, Cocconeidaceae) from Japan**

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Abstract

A new species of *Cocconeis*, *C. churalis*, was found on a red seaweed collected from the Southwest Islands of Japan. Its morphology was examined with both light and scanning electron microscopy and the details are described here. This small diatom is characterized by the concave raphid valve with a slightly sigmoid raphe and uniseriate striae consists of circular areolae occluded by hymenes with perforations arranged in centric array type, the convex araphid valve with uniseriate striae consists of several alveoli occluded hymenes with perforations arranged in a parallel array type, and the cingulum consists of four non-fimbriated girdle bands including a valvocopula.

Key words: *Cocconeis churalis*, Japan, marine diatom, new species

Introduction

Cocconeis Ehrenberg (Bacillariophyta: Cocconeidaceae) is a worldwide genus comprising of at least 280 species (VanLandingham 1968), which inhabit freshwater, brackish water and marine environments. It is defined by being heterovalvate and by the diversity of structures of raphe, areola, and cingulum. *Cocconeis* has not been comprehensively studied for its morphological structure. The last treatment of the morphology and distribution of marine species of *Cocconeis* from Japan, which recorded 21 species (unpublished data), was undertaken in a series of papers by Suzuki *et al.* (Suzuki & Nagumo 2003a, 2004, Suzuki *et al.* 2001a–d, 2008, and Suzuki & Tanaka 2006). Many of these species are epiphytic on seaweed (Tiffany 2011, and references therein) and characterized by their raphid valves having uniseriate striae, the araphid valves having chambered alveoli and their non-fimbriate valvocopula (Suzuki *et al.* 2001a, c, d, De Stefano & Romero 2005).

In the present study, an unrecognized species of *Cocconeis* was found growing on the red seaweed *Murrayella pericladus* (C. Agardh) Schmitz (Rhodomelaceae, Rhodophyceae) from the coast of Ishigaki Island, the Southwest Islands, Okinawa Pref., Japan. Critical examination, using light (LM) and scanning electron microscopy (SEM), as well as a review of the literature, support the view that this diatom is a new species; we propose the name *C. churalis* Hide. Suzuki. Details of its morphological features are described below.