

## Type Examination of *Cyclotella wortereckii* Hust. (Bacillariophyceae) with Special Attention to the Position of Its Rimoportula

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**Abstract** Isotype material of *Cyclotella wortereckii* Hust. was examined using SEM. Two taxa were observed in this material. Since, both are presented in the photographs of the holotype slide by Simonsen (1987), we designate here a lectotype individual from this slide.

**Key words:** rimoportula, *Discostella*, *Cyclotella pseudostelligera* complex.

### Introduction

Taxa in the genus *Discostella* Houk & Klee, which included species from the *Cyclotella stelligera* group, have been reported worldwide as a planktonic species (e.g. Krammer & Lange-Bertalot, 1991, Tuji & Houki, 2001, Houk & Klee, 2004). However, the identification of this group has not been clear. Characters used for identification of this group, such as central area pattern, density of and branching of the striae, are not sufficient to secure identification. Tuji & Houki (2001) pointed out that the position of the rimoportula is a very good character for the identification of *Cyclotella pseudostelligera* group, because the position and form of rimoportula varies so much in the taxa of *Discostella*. They presented SEM photograph of five species of *Cyclotella*, *Cyclotella pseudostelligera* Hust., *Cyclotella stelligeroides* Hust., *Cyclotella wortereckii* Hust., *Cyclotella glomerata* H. Bachm. and *Cyclotella hellae* Chang & Steinberg, which illustrated the position of their rimoportulae.

Nevertheless, this character has not been sufficiently examined in the type material of relevant species. Recently, Houk & Klee (2004) published two SEM's from the type material of *C. wortereckii*. However, the two photographs ap-

pear to be different taxa, hence further examination was required.

In this study, we examined the type material of *C. wortereckii* paying special attention to the position of its rimoportulae.

### Materials and Methods

Isotype raw material, from a small pond in a botanical garden, Buitenzorg, Java (Coll. Hustedt As 1329 in BRM), was examined using SEM.

### Results and Discussion

Examination of type material for *Cyclotella wortereckii* Hust. revealed two different species of *Discostella*, which correspond to those illustrated with light micrographs in Houk & Klee (2004: f. 119–120, and 121–122, respectively). One taxon (Fig. 1) has a stalked rimoportula on the valve face/mantle junction, the other (Fig. 2) has a sessile rimoportula on the mantle, close to the valve end. The position of rimoportulae is thought to be a stable and very important character for the identification of centric diatoms (Theriot *et al.*, 1987; Likhoshway & Crawford, 2001; Tuji & Houki, 2001) hence both kinds of specimen observed in the type material correspond to different taxa. The first corresponds with the current concept of *C.*

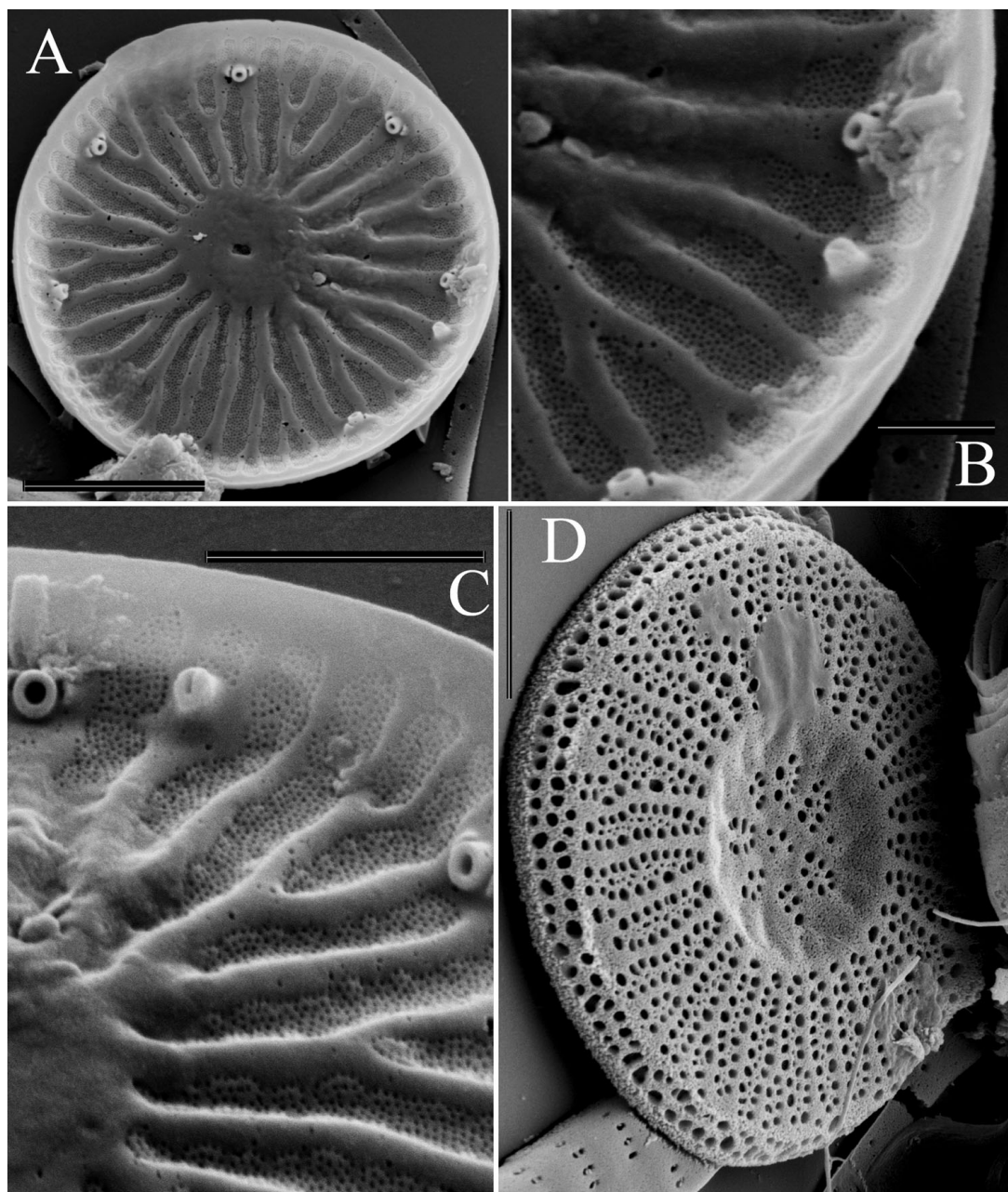


Fig. 1. *Cyclotella wortereckii* Hust. Isotype. Coll. Husted As 1329, from a small pond in Buitenzorg, Java.  
A: Inner view of valve face. B, C: Inner view of valve face showing a stalked rimoportula on valve face/mantle junction. D: External view of valve face.

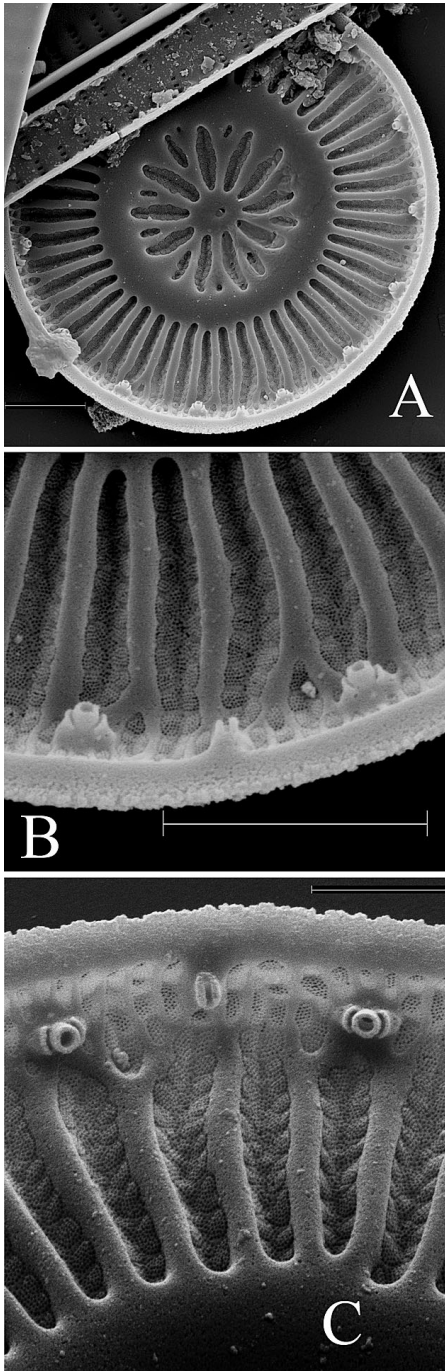


Fig. 2. *Cyclotella pseudostelligera* Hust. Coll. Hustedt As 1329, from a small pond in Buitenzorg, Java.

A: Inner view of valve face. B: Inner view of valve face showing a sessile rimoportula on the mantle closed the valve end. C: External view of valve face.

*wortereckii* (Krammer & Lange-Bertalot, 1991; Tuji & Houki, 2001), the other to that of *C. pseudostelligera* Hust. (Tuji & Houki, 2001).

Since both were previously illustrated from the holotype slide of *C. wortereckii* (Simonsen, 1987, plate 400, figs 7–14), we will designate an individual specimen as lectotype for *C. wortereckii*.

*Discostella wortereckii* (Hust.) Houk et Klee  
Diat. Res. **19**: 223. 2004.

Basionym: *Cyclotella wortereckii* Hust. Arch. Hydrobiol. **42**: 16. f. 11–13. 1942.

Holotype: Slide Ac1/68 in BRM (micrographs in Simonsen, 1987: Plate 400, figs 7–14)

Lectotype (designated here): Selected individual at position 467.1 on the holotype slide Ac1/68 in BRM (=Plate 400, figure 9 in Simonsen, 1987).

#### Acknowledgements

We extend our thanks to Richard Crawford and Friedel Hinz of the Friedrich Hustedt Study Centre for Diatoms, Alfred Wegener Institut für Polar- und Meeresforschung (BRM) for help in their herbarium and the loan and gift of specimens.

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