

Ultrastructure of *Odontella rostrata* (Hustedt) Simonsen, a New Record for the South Atlantic Ocean

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Abstract

Odontella rostrata (Hustedt) Simonsen from the coastal waters of the Río Negro, Argentina, was studied using both light and scanning electron microscopy and it represents a new record for the South Atlantic Ocean.

Introduction

According to Ross and Sims (1971) and Hoban (1983) the biddulphioid species with poroid valves and ocellate elevations should be placed in the genus *Odontella* while the biddulphioid species with poroid valve and pseudocellate elevations should be placed in the genus *Biddulphia*.

In this paper the fine structure of the valve of *Odontella rostrata* (Hustedt) Simonsen was examined with the aim of determining whether its location within this genus is correct according to the criterion described above.

Material and Methods

The material studied was collected in 20 µm mesh plankton nets from San Antonio Bay and San Matías Gulf, Río Negro, Argentina. The samples were preserved in buffered formalin, cleaned of organic matter using the method of Hasle and Syvertsen (1980), mounted in Hyrax for study with the light microscope and in water on glass plugs for observation in the scanning electron microscope. The material has been incorporated in the collection of the División Ficología, Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata as 'Diatom from San Antonio Oeste'.

The observations were carried out with a Wild M20 phase contrast microscope and Jeol J.S.M. 35 CF scanning electron microscope.

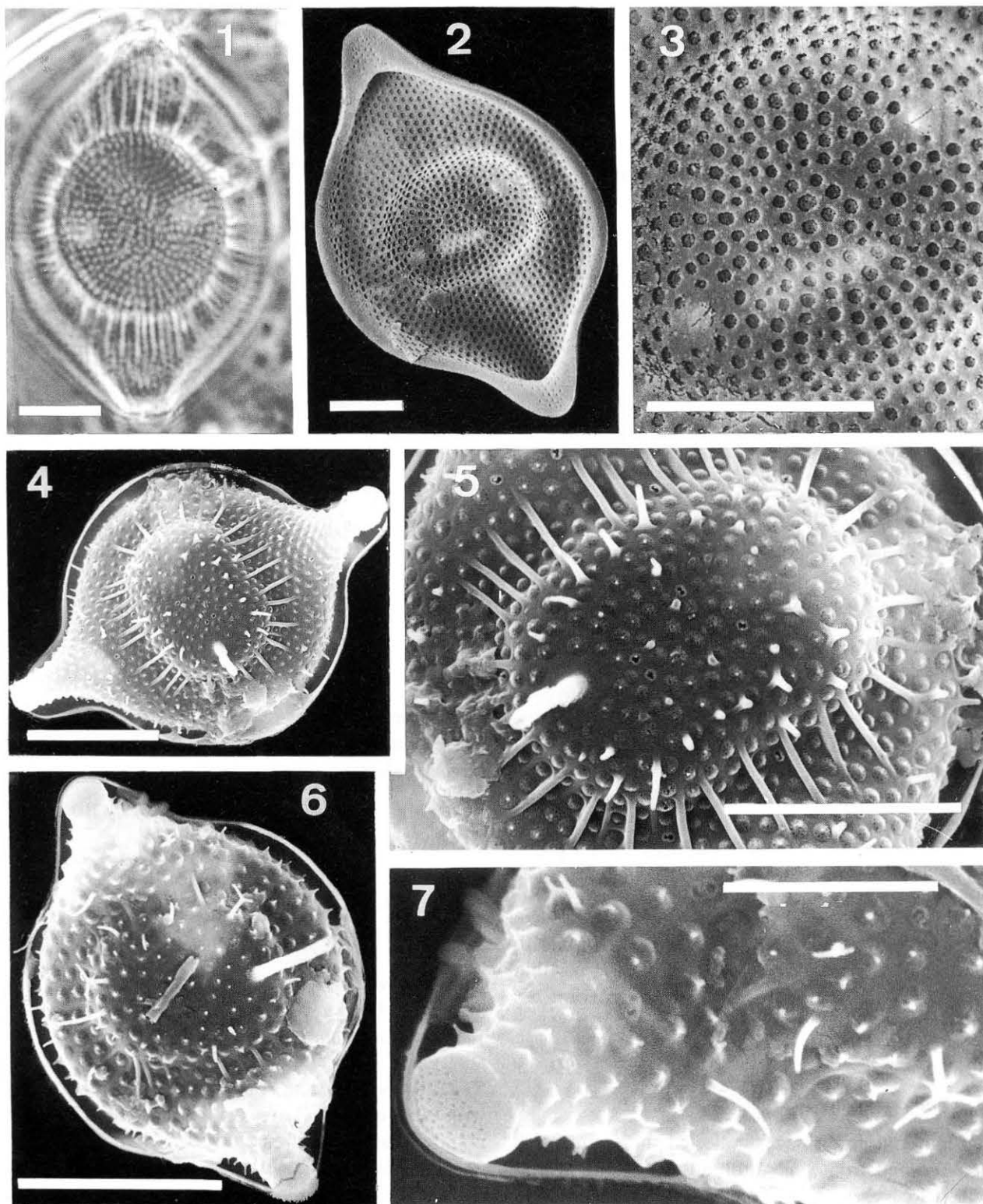
The terminology used is that suggested by Ross *et al.* (1978).

Results

Odontella rostrata (Hustedt) Simonsen (Figs 1–7) Simonsen, 1987: 250–251, pl 272, figs 1–11.

Biddulphia rostrata Hustedt (1939): 591, figs 5–7.

The cells usually occur singly and have convex valves with elevated central areas (Figs 1, 4–6). The valve mantle is turned towards the margin of the valve (Fig. 2). Two elevations, each with a limited perforated plate (ocellus) occur on each valve (Fig. 7). Radial rows of poroid areolae with domed cribrum-like vela, with a central granule, ornament the valve surface. From many to just a few siliceous radial ribs are located between the border of the elevated central area and the mantle (Figs 4–6). Twinned pores and spines are relatively well developed and are scattered over the valve (Fig. 7). There are one or two labiate processes located next to the border of the central area and opposite to the elevations. These are sessile



Figs 1–7. *Odontella rostrata*. Fig. 1. light microscopy, valve view, Hyrax. Figs 2–7. scanning electron microscopy. Figs 2–3. inside view of valves, detail of labiate processes. Figs 4–7. valves, outside view. Fig. 5. detail of central area with labiate process, spines and siliceous radial ribs. Fig. 7. detail of ocellus and twinned pores. Scale bar: Figs 1–6, 5 μm ; Fig. 7, 2 μm

internally but have stout external tubes of varying length (Figs 2–3). The girdle elements are finely punctate. In the samples examined the apical axis was 12–33 μm , the transapical axis 8–18 μm and there were 20–25 areolae in 10 μm . The material examined was marine neritic phytoplankton from three areas; Bahia San Antonio, Banco Reparo, 20/VII/84, sample No 2(1) where the surface water temperature was 8 °C; Canal Escondido, 22/VIII/84, sample No 9(1), surface temperature 8.5 °C; and Golfo San Matias, Las Grutas, 5/II/85, samples No 47(1), (2), surface temperature 21 °C.

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Discussion

Odontella rostrata is correctly placed in the genus *Odontella* because of the presence of ocellate elevations. This species is morphologically related to the poroid forms of the genus such as *Odontella aurita* (Lyngbye) Agardh and *Odontella litigiosa* (Van Heurck) Hoban.

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