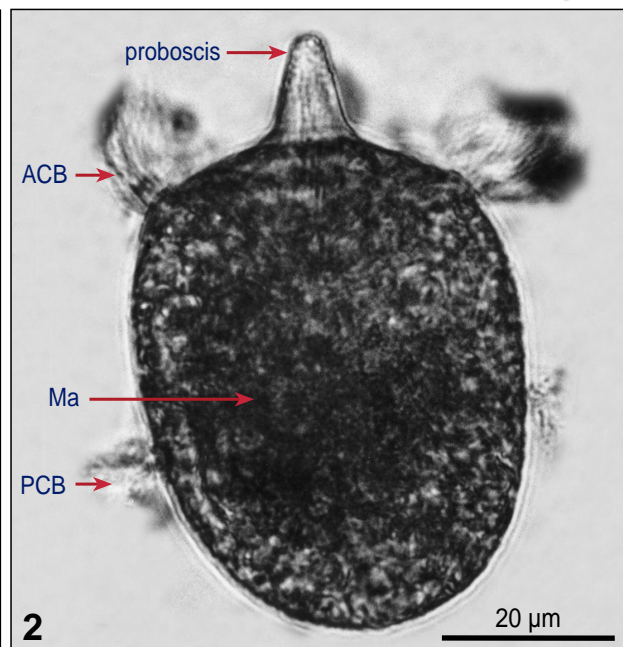
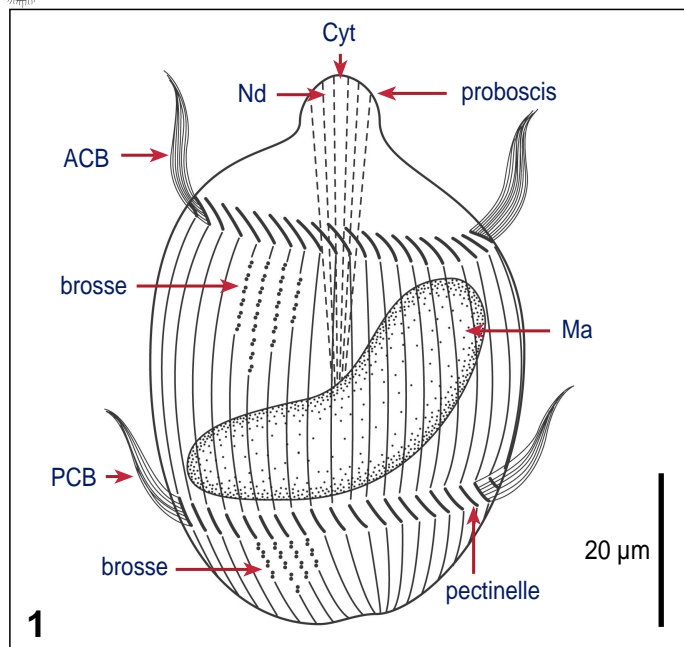


# *Didinium gargantua* Meunier, 1910



## Key features

Cell ellipsoidal, anterior end truncate with distinct conical protrusion (proboscis); two ciliary bands (anterior - ACB and posterior - PCB), two dorsal brosses, one underneath each ciliary band; one macronucleus, kidney-shaped to C-shaped

## Measurements

Length: 70 (40-200) µm  
Width: 50 (30-120) µm  
No of K: 45 (50-75)  
Ma size: 30 x 15 µm  
Biovolume: 85,000 µm<sup>3</sup>

## Movement

Rotates about main body axis.

## Food

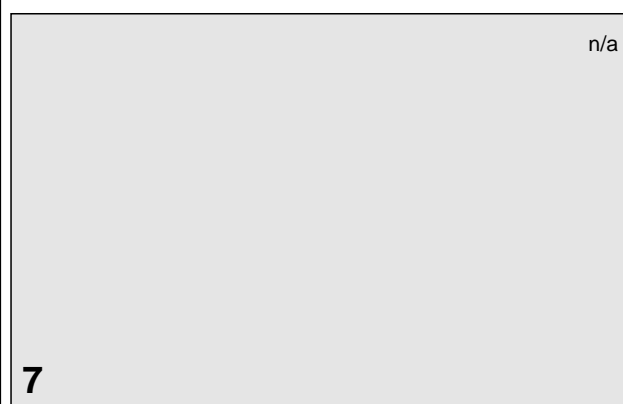
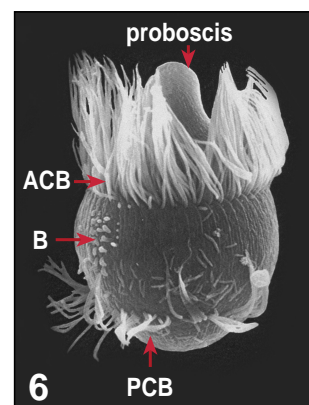
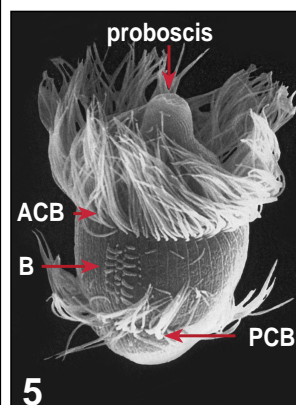
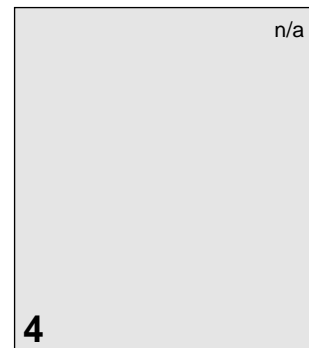
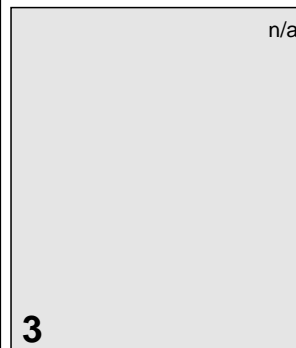
Mainly heterotrophic flagellates, dinoflagellates, cryptophytes, chlorophytes (cell diameter 5-10 µm); can ingest cells of equal size or larger

## Ecological data

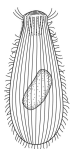
Temperature: 8-18 °C (-2 °C from sea ice)  
Salinity: 12-34 ‰ (41 ‰ from sea ice)

## References

Agatha S (unpubl.); Leegaard C 1920; Meunier A 1910; Petz W, Song W, Wilbert N 1995; Protist Information Server 1995-2001 (<http://protist.i.hosei.ac.jp/PDB/Images/Ciliophora/Didinium/index.html>)



**Fig 1** Line drawing of a protargol impregnated cell, showing kineties, brosses and macronucleus; **Fig 2,3** Lugol's fixed cell, lateral view. (**Fig 4** Lugol's fixed and DAPI stained cell, illustrating nuclear shape). **Fig 5,6** SEM images of cells fixed in glutaraldehyde, showing shape, wreaths of pectinelles, and brosse. (**Fig 7**. Protargol impregnated cell.)



# *Didinium gargantua* Meunier, 1910

## Species description

**Cell broadly ellipsoidal**, posterior widely rounded; Lugol's fixed cells are occasionally globular, 70 (40-200)  $\mu\text{m}$  long and 50 (30-120)  $\mu\text{m}$  wide; **anterior end truncated, with a distinct conical protrusion (= proboscis)**, occupying 15-25% of the body length (Fig 1,2,5); extrusomes scattered throughout cell, toxicysts are located between the nematodesmata (Fig 1).

Cytostome on the apical end of the proboscis; nematodesmata reach deep into the cell (Fig 1); cytostome flexible, ciliate can ingest prey larger than its own size.

**45 (50-75) equally spaced somatic kineties**, only partly ciliated, forming **anterior and posterior ciliary bands** (ACB, PCB, wreath of pectinellae: about 15 kinetosomes per row; Fig 1,2,5) inclined to the body axis (Fig 1,5); cilia  $\sim 16 \mu\text{m}$  long; **two dorsal brosses, one underneath each ciliary band** (Fig 1), consist of 2-4 rows of dikinetids (characteristic for the different populations studied, however, not seen in Lugol's fixed material).

**One macronucleus, kidney-shaped to C-shaped**, near the center of the body located (Fig 1,2).

## Similar species

*Didinium nasutum* (freshwater or brackish water, dorsal brosse with 5-9 rows, macronucleus considerably longer); *D. chlorelligerum* (freshwater, dorsal brush with more rows, with symbiotic green algae); *Monodinium balbianii* (only one ciliary band - NOTE: two ciliary bands might be present during division).

## List of synonyms

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## Taxonomical remarks

*Didinium gargantua* was originally described from the Arctic Sea (Meunier 1910) and recently redescribed from Antarctic sea ice (Petz, Song & Wilbert 1995). Most records from marine and brackish waters refer to this species. However, differences in the infraciliature between polar and North Sea populations suggest that at least three marine species of *Didinium* exist. Since protargol staining is necessary to reveal the species specific features, we only refer to *D. gargantua*. A detail taxonomic study on *Didinium* from the Arctic type location is required, before further taxonomical steps are taken. These taxonomical problems should be recognised, when interpreting ecological data.

## Notes