



Observations on

Melosira moniliformis (O. F. Müller 1783) C. A. Agardh 1824

Most likely ID: n. a.

Synonyms: n. a.

EOL Phylogenetic tree: [Melosira moniliformis](#)

Morphological details of *Melosira moniliformis*

The species is characterized by cylindrical to subspherical cell shape. The cell groups form filaments that are held together by mucilage pads. The cells characteristically associate in groups of two or three and are connected by mantle structures called "cingula".

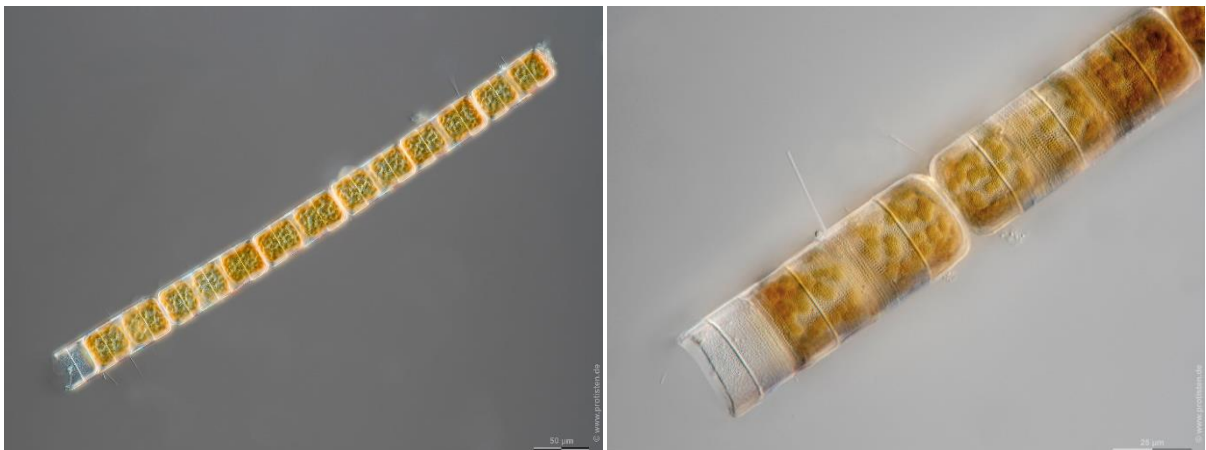


Fig. 1: Filaments of *Melosira moniliformis*. Left: Groups of 2 cells each. Scale bar indicates 50 µm. Right: Groups of 3 cells each. Scale bar indicates 25 µm (right).

Sampling location: Baltic Sea, Kieler Förde, Kiel Fjord (Germany), Latitude: 54.3894126, Longitude: 10.1749055

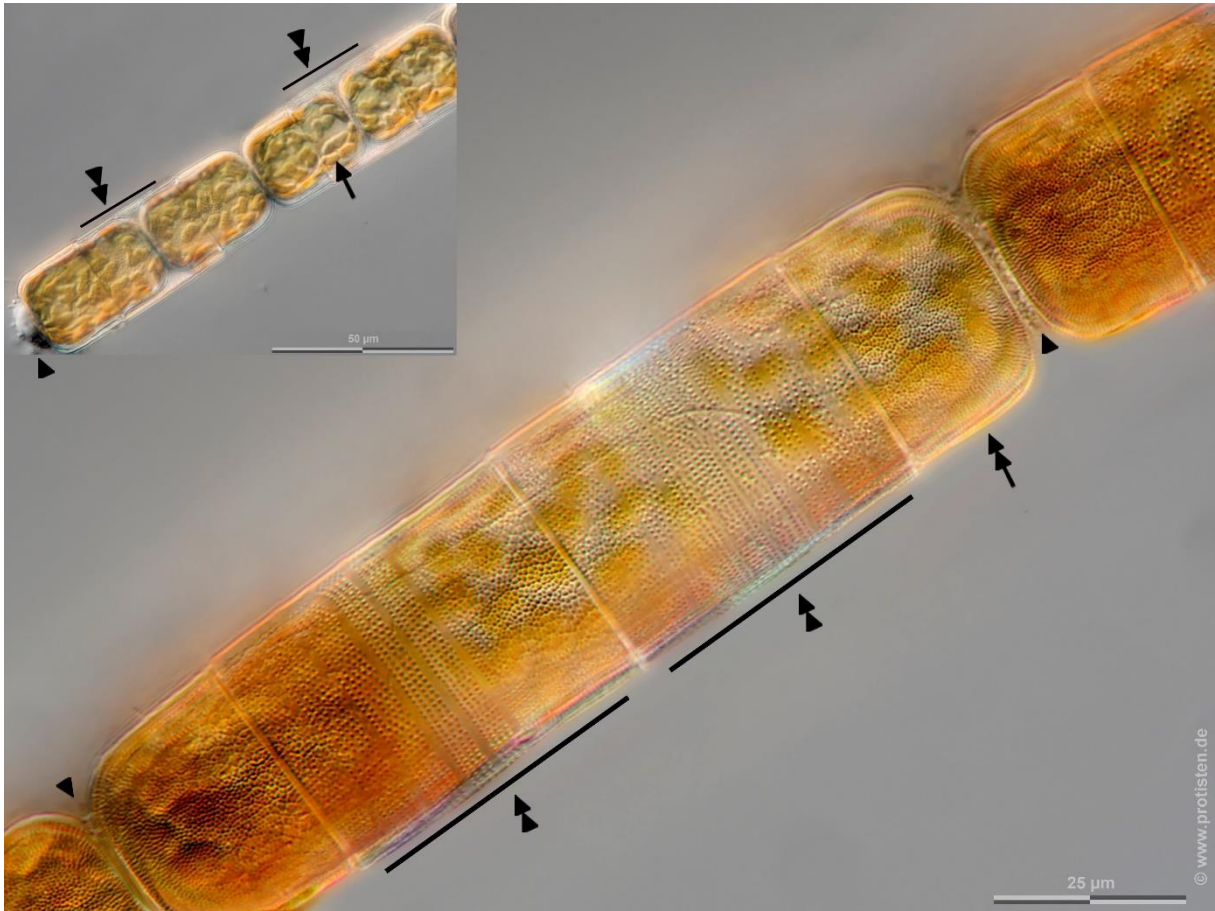


Fig. 2: Upper left inset: The focal plane is at the chloroplasts, which line the frustule lying parietal (arrow). Groups of 2 cells each. Scale bar indicates 50 μm . Main image: The cingula (double arrowhead) forming a cylindrical mantle connect two or three cells. These coats enclose the valves of the individual cells. The ornamentation of the cingula differs significantly from that of the valves (double headed arrow). Scale bar of main image indicates 25 μm .

The sexual reproduction of *Melosira moniliformis*

The sexual reproduction of centric diatoms (Centrales) is characterized by oogamy. In *Melosira*, the spermatozooids are formed in narrower, the oogonia in broader filaments. After meiosis, four mobile spermatozoa with one flagellum develop in the male gamete mother cells (antheridia), in each of the oogonia three meiotic nuclei collapse and only one egg cell capable of fertilization remains.

(After Krammer, K. and van den Hoek, C.)



Fig. 3: Spermatozoids: We can see flagella (arrow) and their golden-brown chloroplast (double arrowhead, color due to the accessory dye fucoxanthin) at the posterior end of each spermatozoid (arrowhead). Scale bar indicates 50 μm .