Closterium moniliferum

(Bory) Ehrenberg ex Ralfs, 1848

Most likely ID: n.a.

Synonym: n.a.

Sampling location: <u>Ulmisried</u>, <u>Purren pond</u>, <u>Mainau pond</u>, <u>Bussenried</u>, <u>Bündtlisried</u>, <u>Pond</u> <u>of the waste disposal company Constance</u>, <u>Simmelried</u>

Phylogenetic tree: Closterium moniliferum

Diagnosis:

- cell crescent-shape tapering to rounded apices
- middle of ventral side slightly convex
- length 200–350 μm , width 35–55 μm
- two chloroplasts, each with 3-6 longitudinal ridges
- 2-10 pyrenoids arranged along cell axis, sometimes scattered
- girdle bands absent
- apices with each one vacuole filled with oval crystals
- cell wall with fine striation (14–20 striae/10 $\mu m)$
- nucleus central in a cytoplasm bridge between the chloroplasts



Closterium moniliferum

Closterium moniliforme is one of the most common representatives of the genus *Closterium*. I find this species in almost all my sampling sites. Closterium moniliferum can be recognized by the slightly convex shape of the ventral side and that the pyrenoids are arranged along the longitudinal axis of the half-cells. The cell wall is finely striated (s. fig. 4) and the apices are rounded and only slightly bent dorsally (s. fig. 2 a-b). In the terminal vacuoles there are numerous oval crystals of barium sulphate with unknown function (s. fig. 2 b). The similar species *Closterium ehrenbergii* is larger (> 400 μ m) and the pyrenoids in this species are scattered on the surface of both chloroplasts.



Fig. 1 a-b: Closterium moniliferum. $L = 240 \mu m$. Focal plane on the pyrenoids arranged along the cell axis (a) and on the longitudinal ridges of the chloroplasts in the half-cells (b). Obj. 60 X.



Fig. 2 a-b: *Closterium moniliferum.* Two focal planes on one of the apices with the terminal vacuole filled with oval bariumsulfate crystals. Obj. 100 X.



Fig. 3: *Closterium moniliferum*. A half-cell in detail. Note the nucleus (Nu) located between the two chloroplasts (Chl) in a cytoplasm bridge (Cb). PY = pyrenoids. Obj. 100 X.



Fig. 4: Closterium moniliferum. Focal plane on the fine striation of the cell wall. This specimen has 17 striae/10 μ m. Obj. 100 X.