Closterium ehrenbergii

Meneghini ex Ralfs 1848

Most likely ID: n.a.

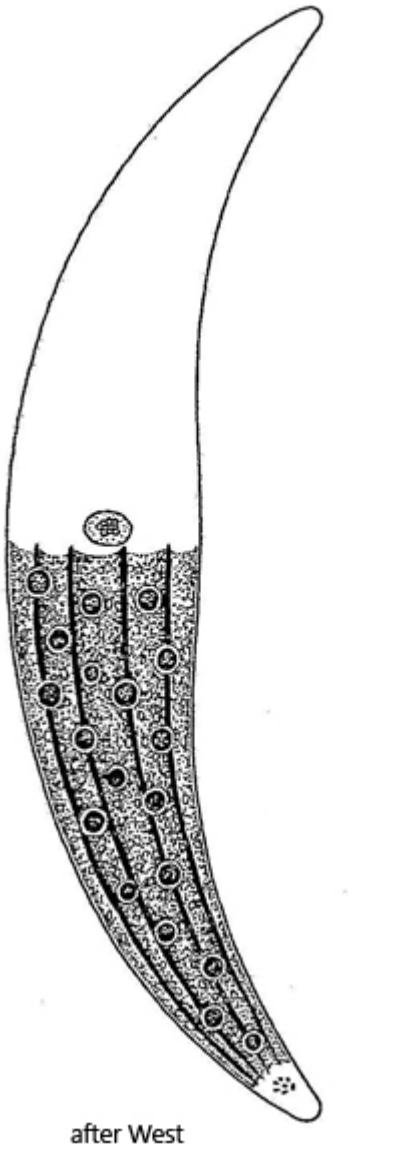
Synonym: n.a.

Sampling location: Ulmisried, Paradieswiesen, Simmelried

Phylogenetic tree: *Closterium ehrenbergii*

Diagnosis:

- cell crescent-shape tapering to rounded apices
- middle of ventral side slightly convex
- length 230–900 µm, width 60–100 µm
- two chloroplasts, each with 3-10 longitudinal ridges
- numerous pyrenoids scattered in the chloroplasts
- girdle bands absent
- apices with each one vacuole filled with numerous gipsum crystals
- cell wall with fine striation (12-20 striae/10 µm)
- nucleus central



Closterium ehrenbergii

Closterium ehrenbergii is a very common representative of the genus *Closterium*. In addition to the impressive size of usually over 400 µm, the pyrenoids scattered in the chloroplasts are the main identifying feature (s. figs. 2 and 3). In all other species of *Closterium*, except *Closterium lunula*, the pyrenoids are arranged more or less along the longitudinal cell axis. The cell shape of *Closterium lunula*, however, is almost straight and less curved.

The cell wall of *Closterium ehrenbergii* has a very fine striation (s. fig. 4). This can be more or less pronounced. In the older literature, the subspecies *Closterium ehrenbergii* var. *malinvernianum* is defined as having a more pronounced striation. However, Lenzenweger (1996) considers this to be an uncertain characteristic, which is why the delimitation of a subspecies does not appear to be justified. Although the specimens of my population showed a fine but clearly visible striation, I stick to the identification *Closterium ehrenbergii*.

Fig. 1 a-b: *Closterium ehrenbergii*. L = 425 µm. Two focal planes of a specimen in brightfield illumination. Obj. 40 X.

Closterium ehrenbergii
Obj. 100 X
PY
© Martin Kreutz

Fig. 2: *Closterium ehrenbergii*. L = 425 µm. The same specimen as shown in fig. 1 a-b in DIC. Note the pyrenoids (PY) scattered in the chloroplasts. Obj. 40 X.

Closterium ehrenbergii
Obj. 100 X
PY
CR
CR
PY
© Martin Kreutz

Fig. 3: *Closterium ehrenbergii*. The pyrenoids (PY) scatteres in the chloroplasts in detail. Beside the pyrenoids some crystals (CR) are visible. Obj. 100 X.

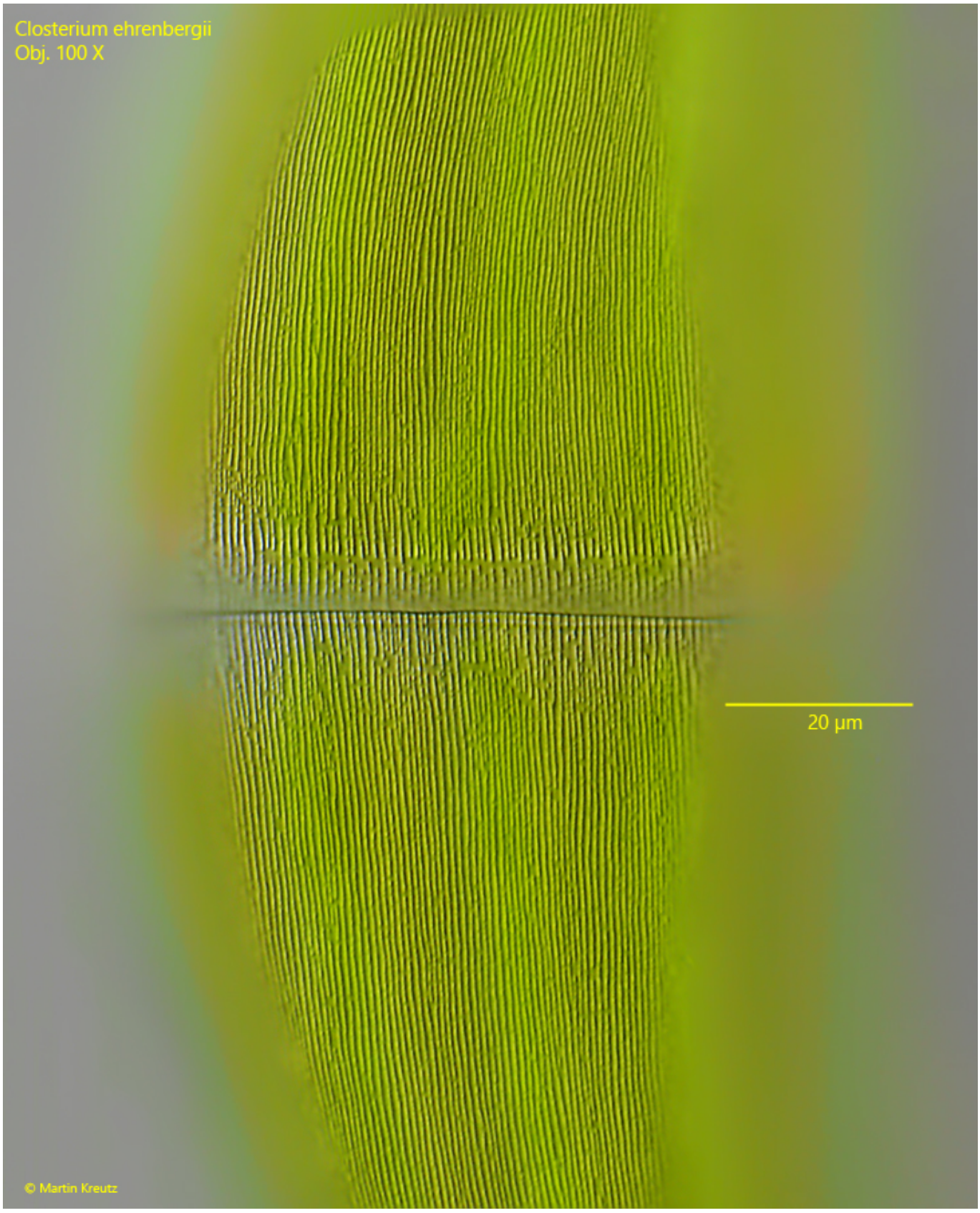


Fig. 4: *Closterium ehrenbergii*. Focal plane on the fine striattion of the cell wall. In this specimen 17 striae/10 µm are present. Obj. 100 X.

Fig. 5: *Closterium ehrenbergii*. The rounded apex with numerous crystales in the terminal vacuole. Obj. 100 X.