Closterium moniliferum

(Bory) Ehrenberg ex Ralfs, 1848

Most likely ID: n.a.

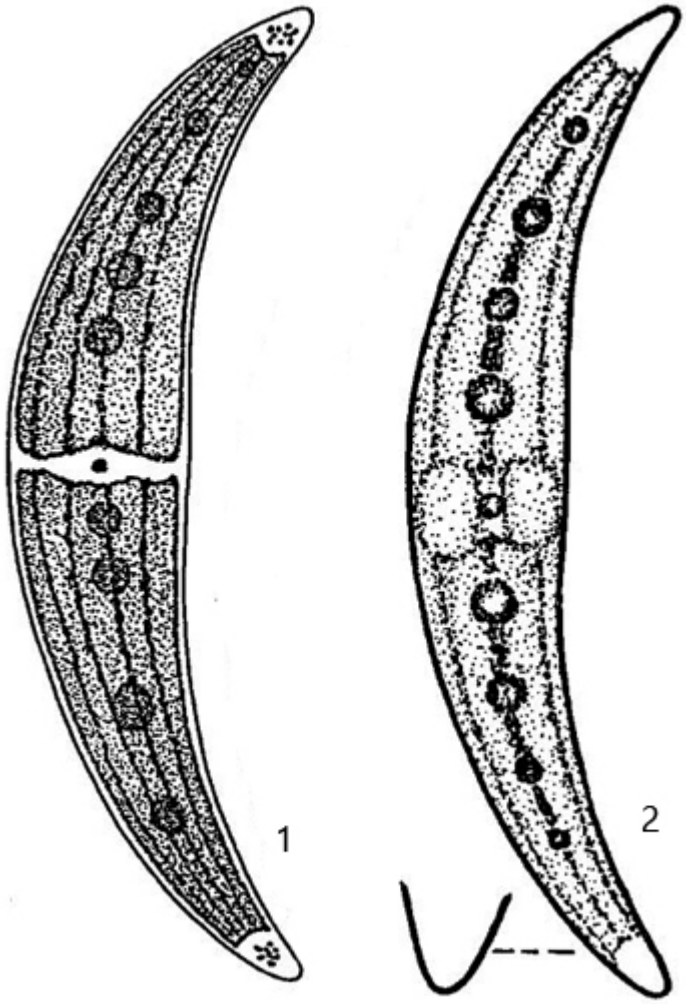
Synonym: n.a.

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

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 µm)
- nucleus central in a cytoplasm bridge between the chloroplasts



1 = after Williamson
2 = after Lenzenweger

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. Sometimes, however, the pyrenoids can also be slightly irregularly offset to the longitudinal axis, as in the specimen shown below (s. figs. 1 a and 3). 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 µm) and the pyrenoids in this species are scattered on the surface of both chloroplasts.

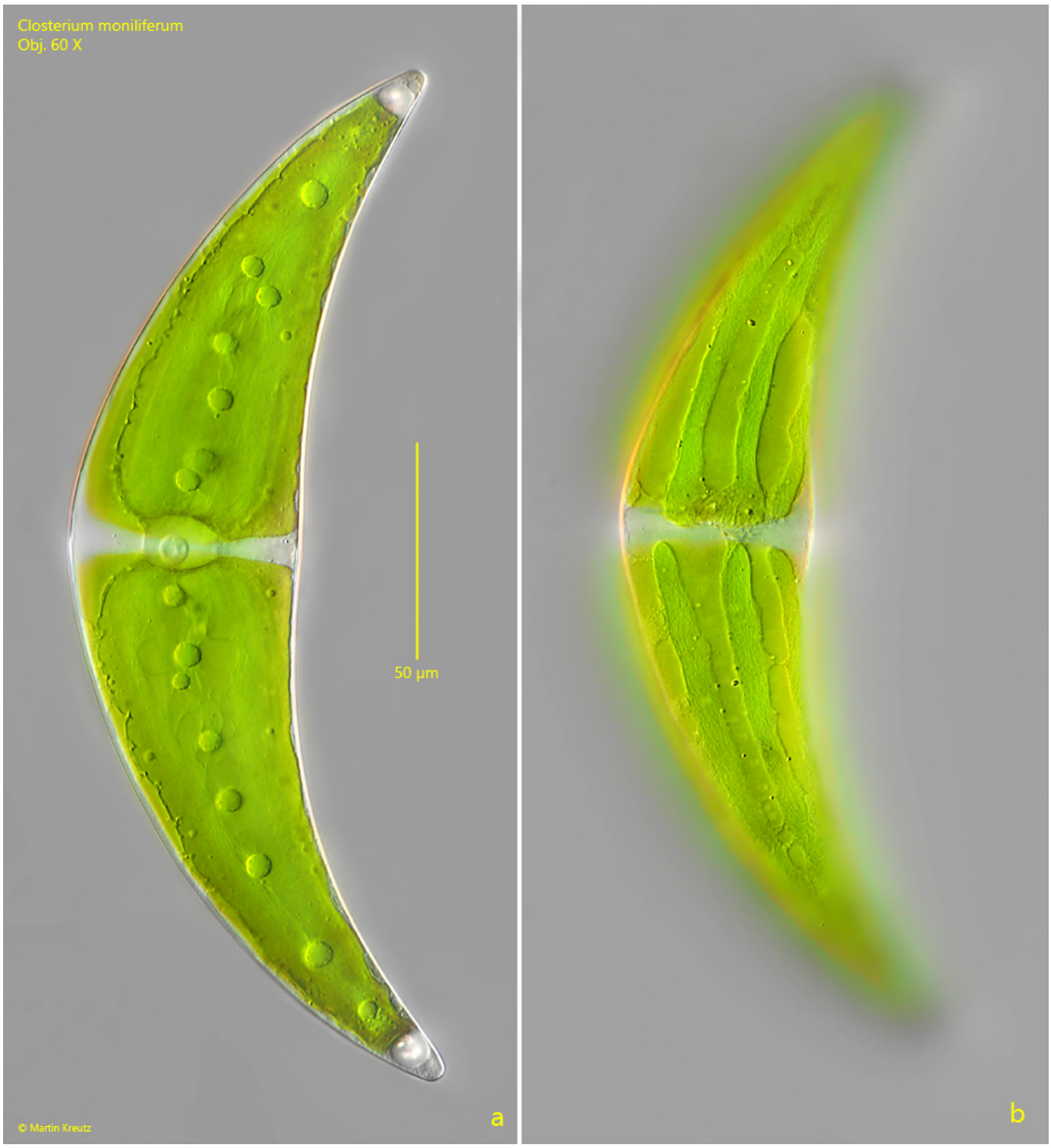


Fig. 1 a-b: *Closterium moniliferum*. L = 240 µm. Focal plane on the pyrenoids arranged along the cell axis (a) and on the longitudinal ridges of the chloroplasts in the half-cells (b). Obj. 60 X.

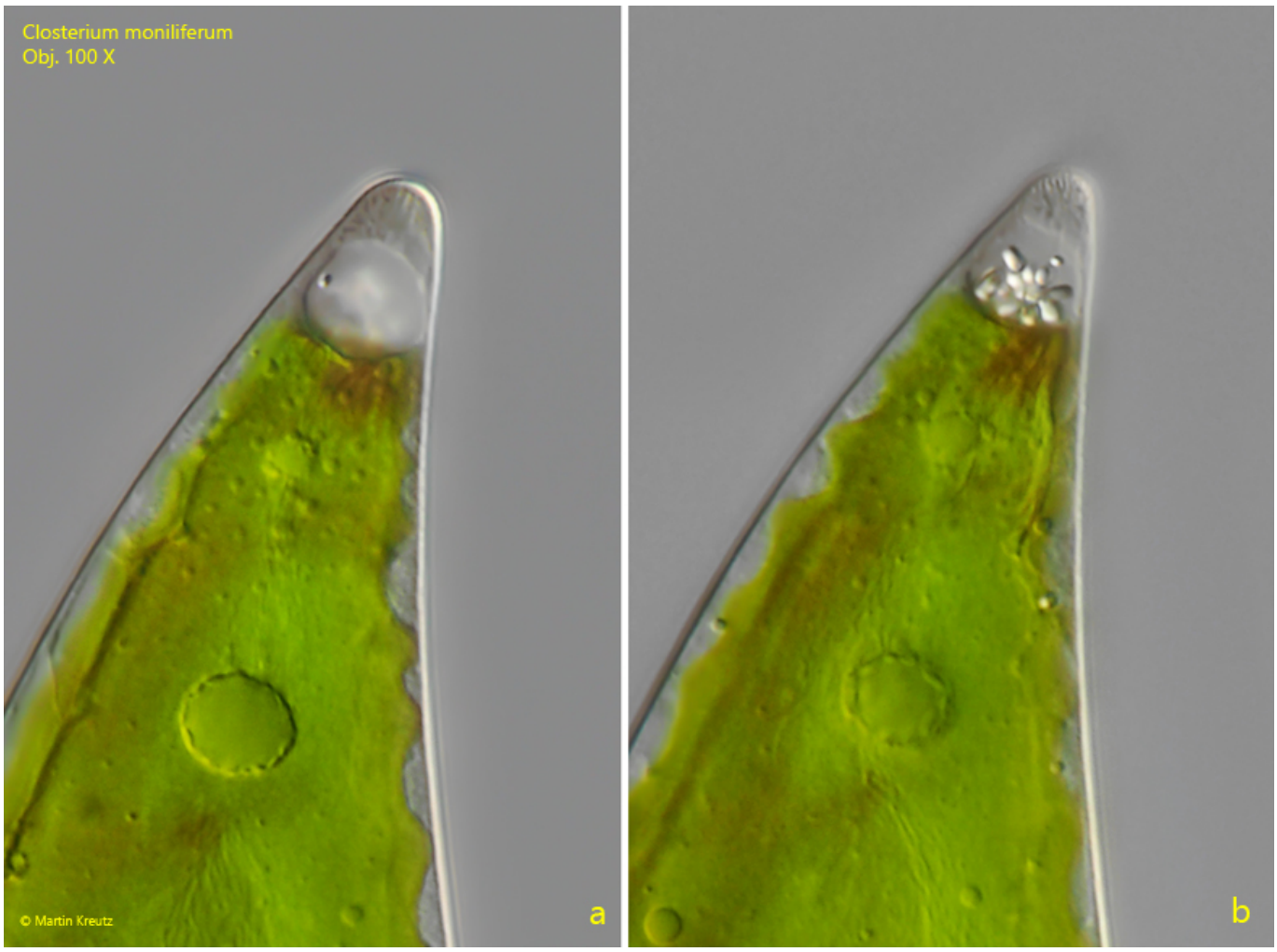


Fig. 2 a-b: *Closterium moniliferum*. Two focal planes on one of the apices with the terminal vacuole filled with oval bariumsulfate crystals. Obj. 100 X.

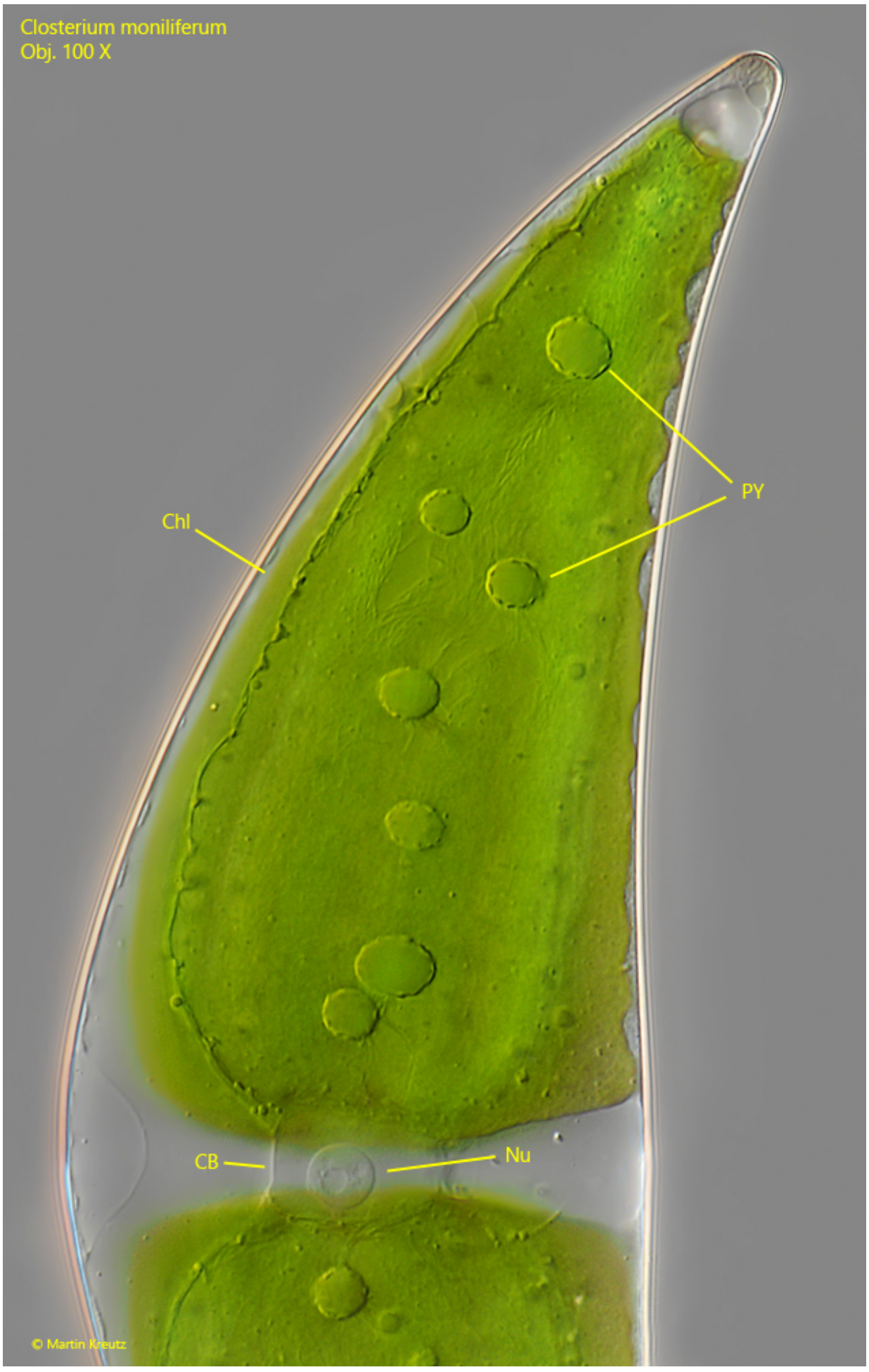

Closterium moniliferum
Obj. 100 X
Chl
PY
CB
Nu
© Martin Kreutz

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.

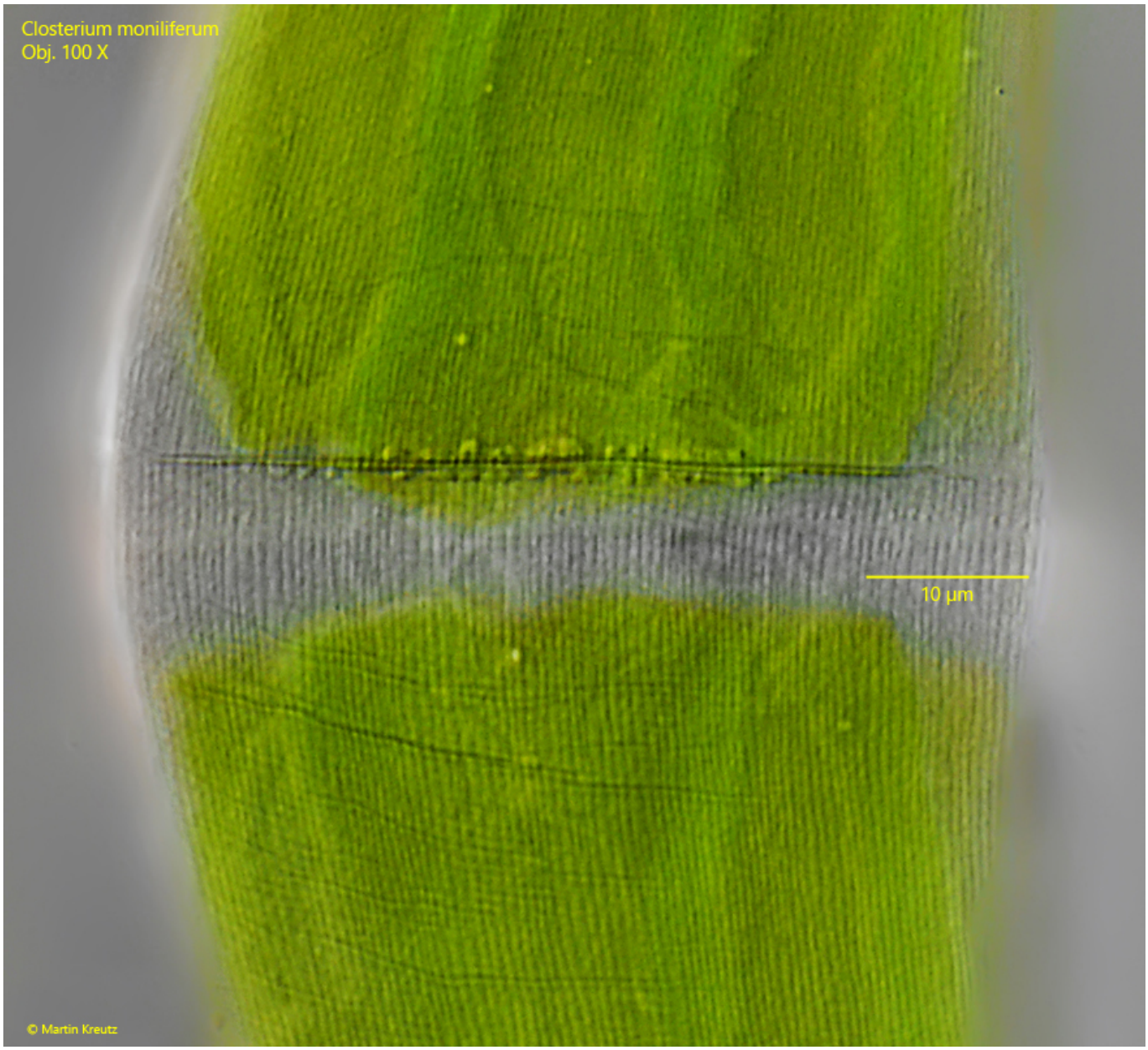


Fig. 4: *Closterium moniliferum*. Focal plane on the fine striation of the cell wall. This specimen has 17 striae/10 µm. Obj. 100 X.