Closterium lineatum

Ehrenberg ex Ralfs, 1848

Most likely ID: n.a.

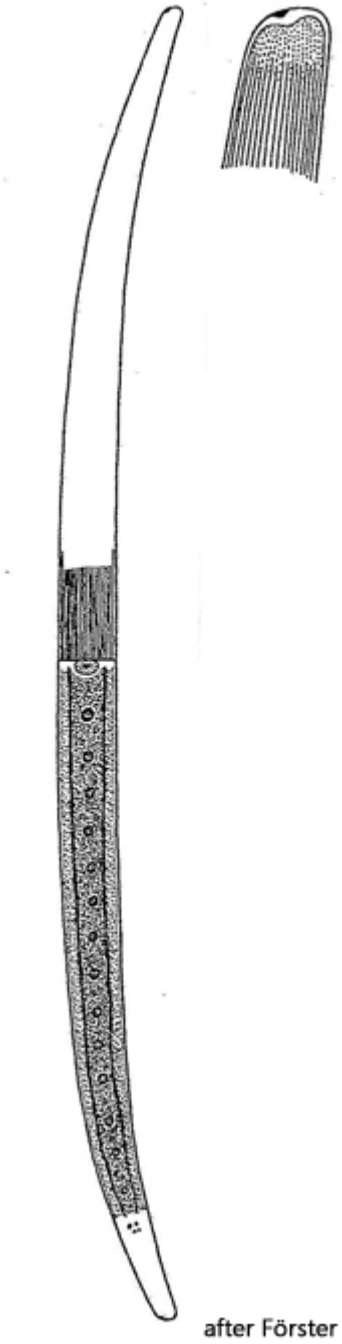
Synonym: n.a.

Sampling location: Simmelried, Ibmer Moor (Austria), Schwemm Moor (Austria)

Phylogenetic tree: *Closterium lineatum*

Diagnosis:

- cell straight in middle part, ends attenuating and curved
- length 400–770 µm width 25–35 µm
- cell wall colorless or brownish
- cell wall smooth or with distinct striae
- puncta between striae
- striae at the cell ends resolved into puncta
- chloroplasts with 3–5 longitudinal ridges
- 9–22 pyrenoids in a row per semi-cell
- apices obliquely truncated with distinct apical pore
- terminal vacuoles with each 4–10 crystals
- girdle bands absent, sometimes pseudo girdle bands



Closterium lineatum

I found *Closterium lineatum* in the Simmelried until 1994, but not again after that. I found further specimens from the Ibmer Moor in Austria in 1995 and finally again from the Schwemm Moor (Austria) in 2025.

Closterium lineatum is one of the largest species in the genus *Closterium*. Most specimens are between 600 and 700 µm long. They are characterized by a straight middle section and then rapidly tapering and slightly curved ends. The apices are obliquely truncated and have a clearly visible, thickened pore (s. fig. 5 a-b). The striation of the cell wall was always very clear in my specimens (s. fig. 3). The cell wall is also clearly punctured between the

striations.

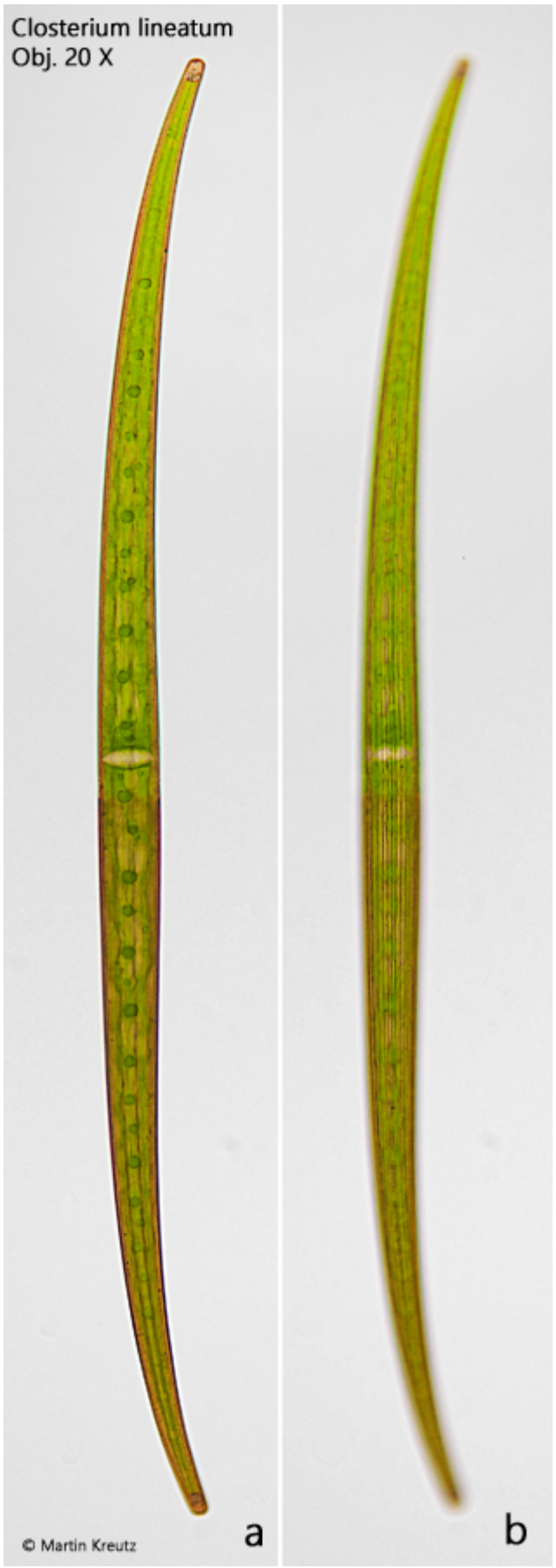


Fig. 1 a-b: *Closterium lineatum*. L = 765 µm. Two focal planes of a specimen in brightfield illumination. Obj. 100 X.

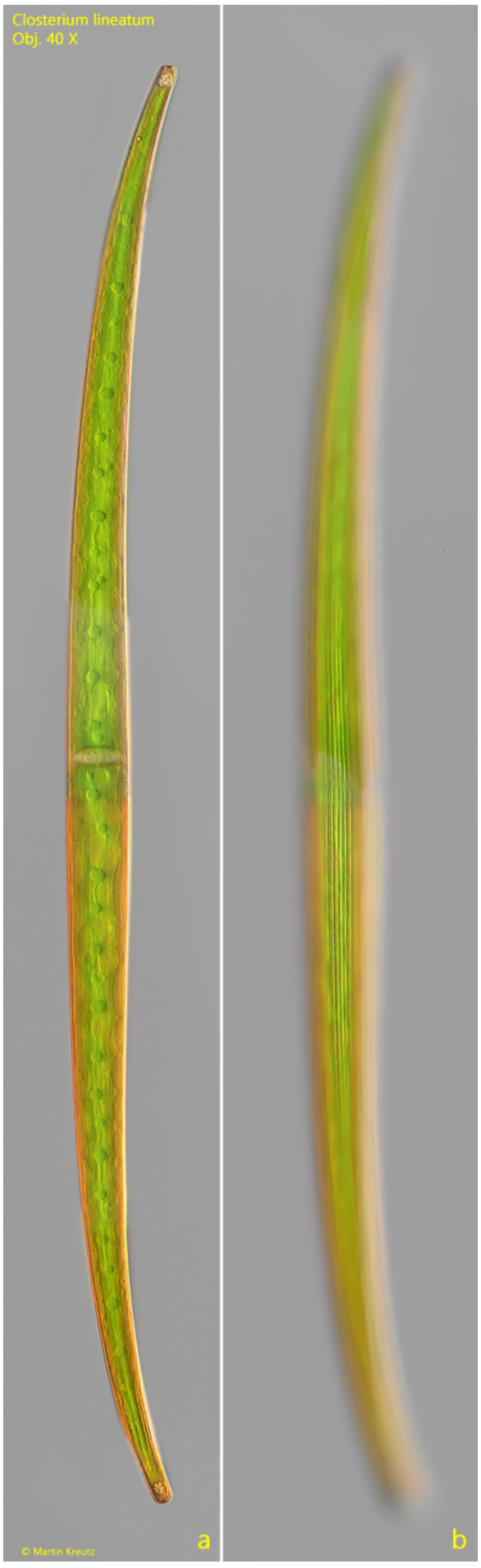

Closterium lineatum
Obj. 40 X
© Martin Kreutz
a
b

Fig. 2 a-b: *Closterium lineatum*. L = 765 µm. The same specimen as shown in fig. 1 a-b in DIC and at higher magnification. Obj. 100 X.

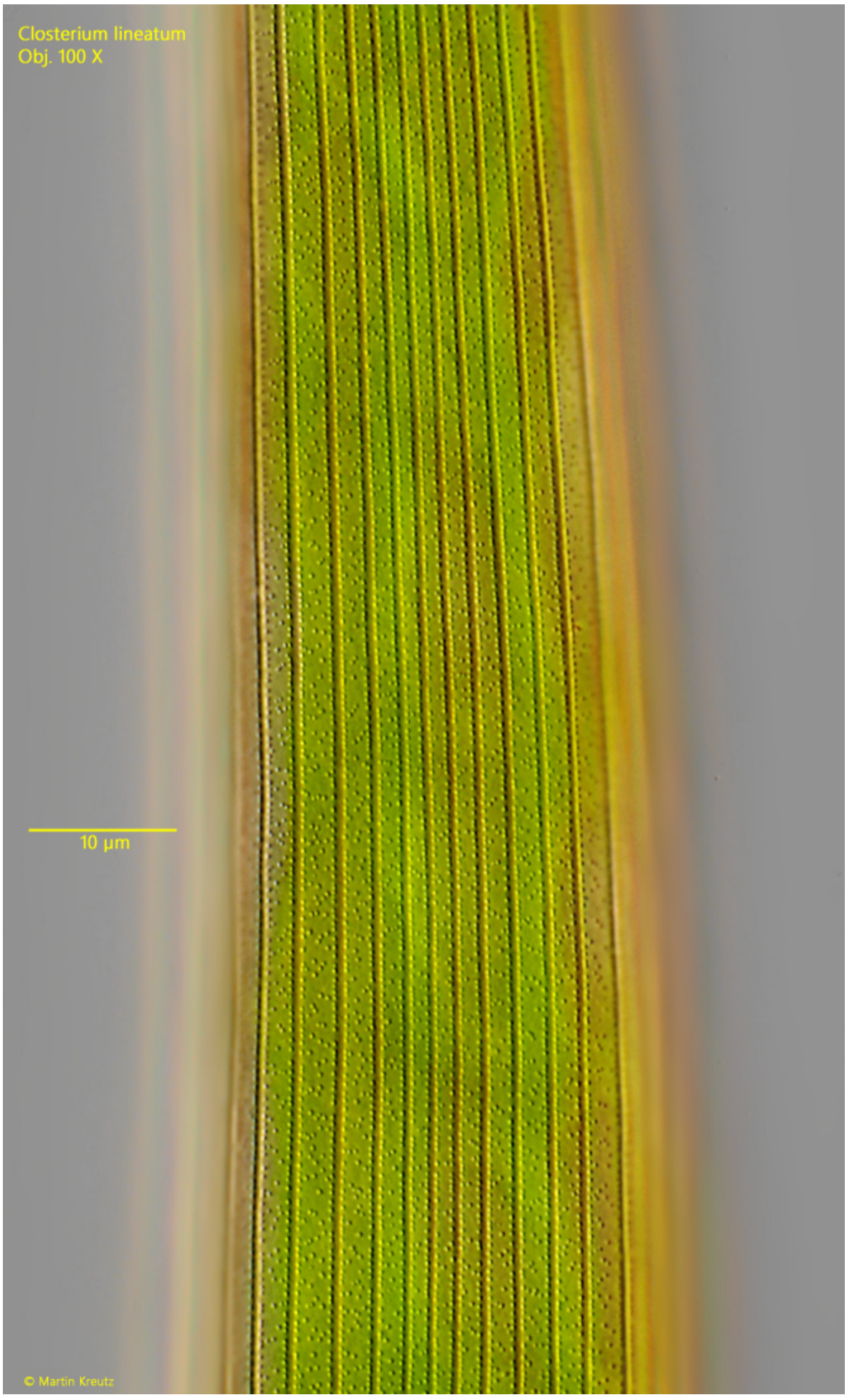

Closterium lineatum
Obj. 100 X
10 µm
© Martin Kreutz

Fig. 3: *Closterium lineatum*. The striation of the cell wall in detail. Between the striae the cell wall is punctured. Obj. 100 X.

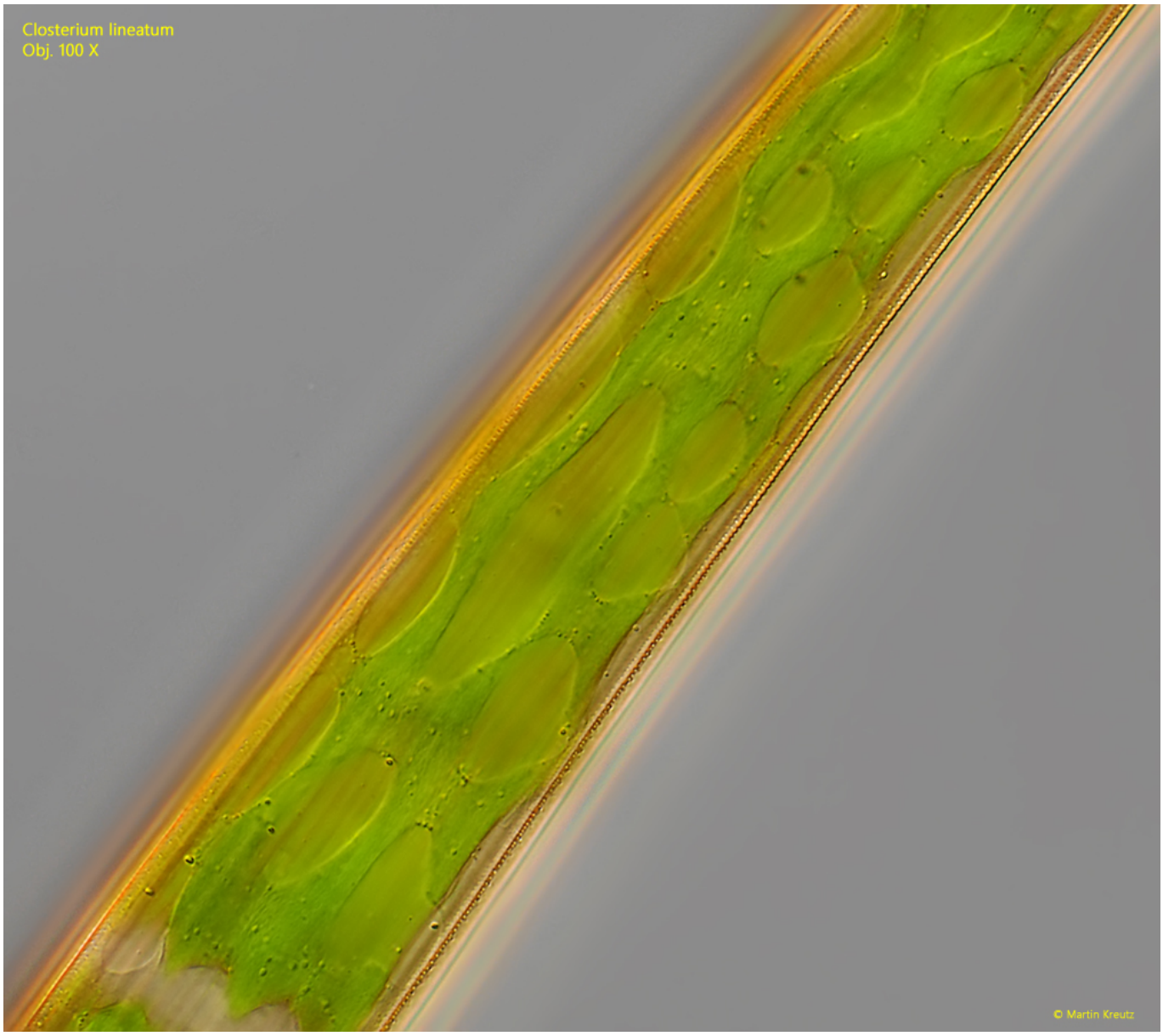


Fig. 4: *Closterium lineatum*. The chloroplast appears reticulate. Obj. 100 X.

Fig. 5 a-b: *Closterium lineatum*. The apex with a distinct, thickened pore (PO) in DIC (a) and in brightfield illumination (b). The terminal vacuole (TV) is filled with several gypsum crystals. Obj. 100 X.