Euglena sociabilis Dangeard, 1902

Most likely ID: n.a.

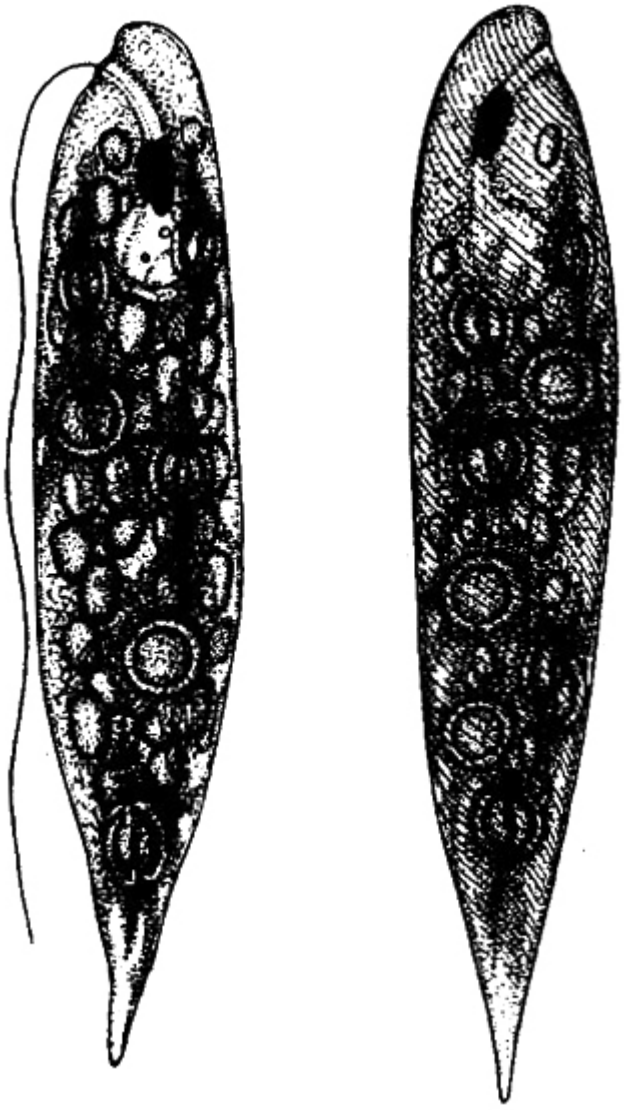
Synonym: n.a.

Sampling location: Simmelried

Phylogenetic tree: *Euglena sociabilis*

Diagnosis:

- body broadly spindle-shaped or cylindrical, blunt tail hyaline
- length 61–112 µm, width 15–30 µm
- 6–11 deeply lobed chloroplasts forming bands with indented margins
- striation of pellicle distinct, running counterclockwise
- ribbon-shaped chloroplasts arranged parallel to striation
- diplopyrenoids present
- flagellum 1–1.5 of body length
- eyespot 5–6 µm diameter
- contractile vacuole below eyespot
- nucleus in center or slightly below
- numerous paramylon grains, cylindrically oval or ellipsoid



Euglena sociabilis

I find *Euglena sociabilis* exclusively in the Simmelried, where the species occurs frequently and regularly. Freely swimming specimens are spindle-shaped, often with parallel sides and a short hyaline tail. Other similar species, such as Euglena *splendens* or *Euglena oblonga*, also have this shape. The main characteristic of *Euglena sociabilis* is the shape of the chloroplasts. If the focal plane is adjusted under the pellicle, the chloroplasts appear like bands with irregular margins. These bands run parallel to the striation of the pellicle. Actually, these bands are the edges of the chloroplasts, which are plates with deeply lobed. However, their shape is difficult to recognize. In the center of each of these chloroplasts so called diplopyrenoid is located. The watch-glass shaped caps of paramylon, which enclose the pyrenoid can be recognized at high magnifications. There are as many pyrenoids as chloroplasts, i.e. 6–11. In the similar species *Euglena oblonga*, which also has ribbon-shaped chloroplasts, there are only 2 pyrenoids.

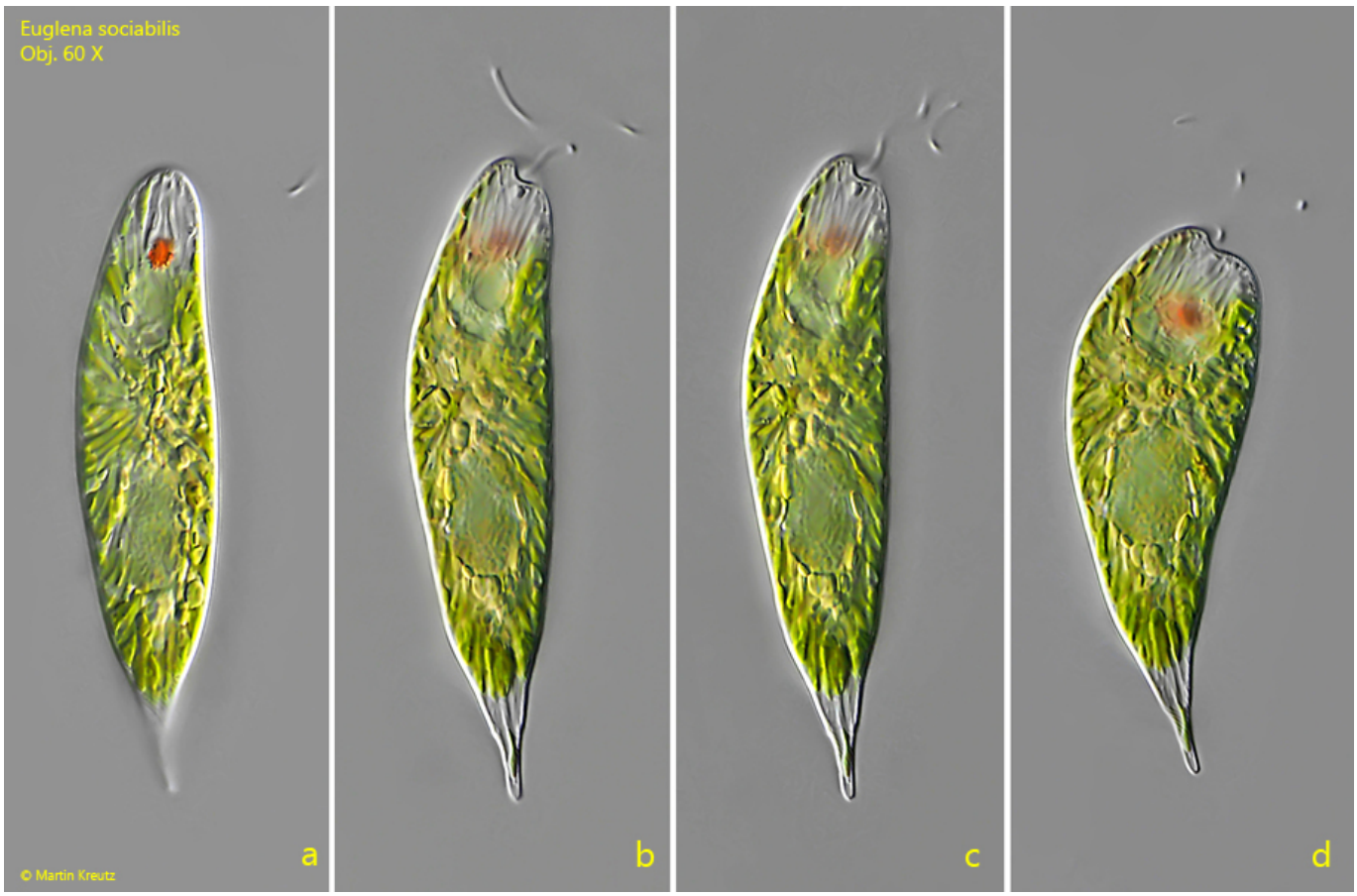


Fig. 1 a-d: *Euglena sociabilis*. L = 80 µm. A freely swimming specimen. Obj. 60 X.

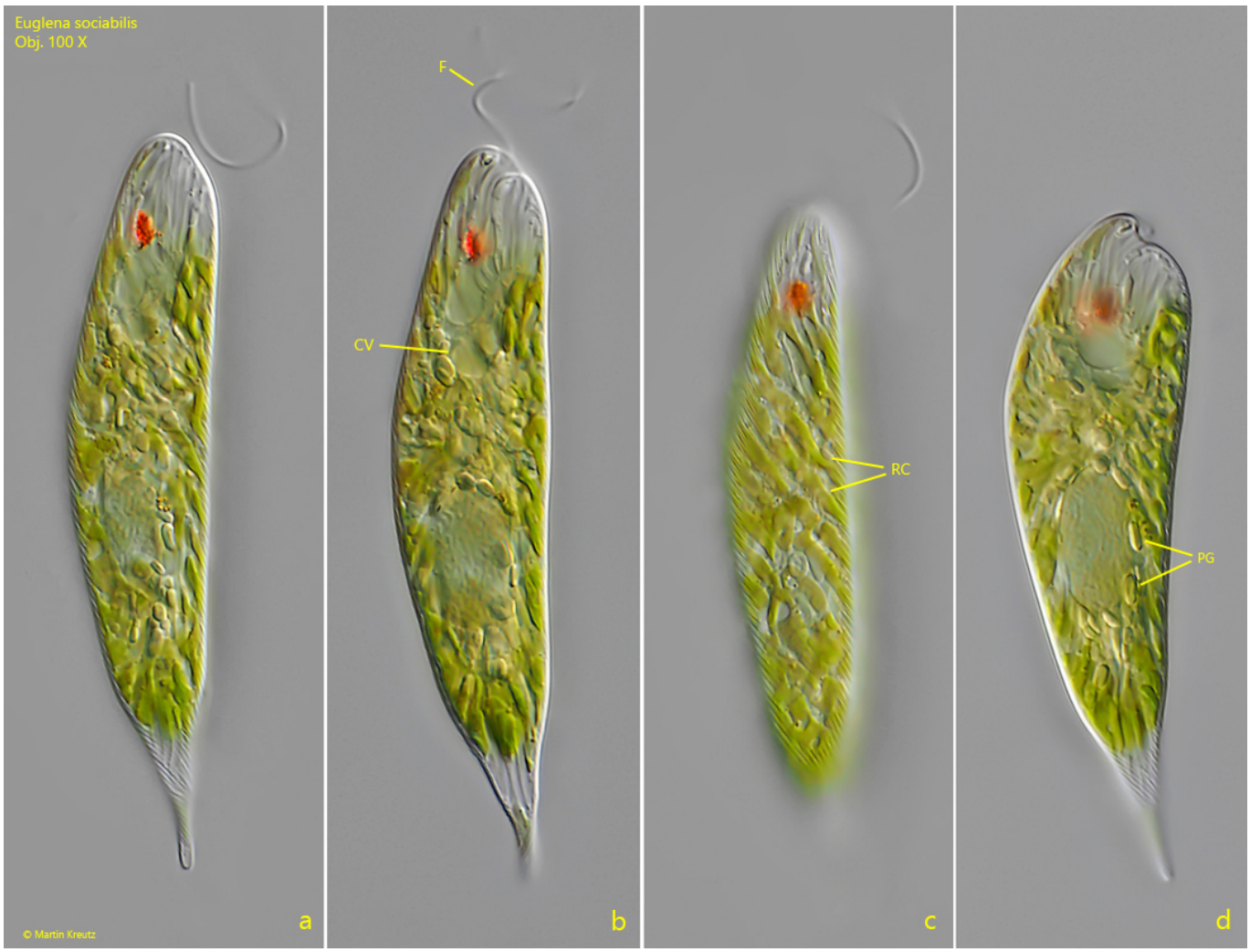


Fig. 2 a-d: *Euglena sociabilis*. L = 80 µm. The same specimen as shown in fig. 1 a-d at higher magnification. Note the ribbon-shaped chloroplasts (RC). CV = contractile vacuole, F = flagellum, PG = paramylon grains. Obj. 100 X.

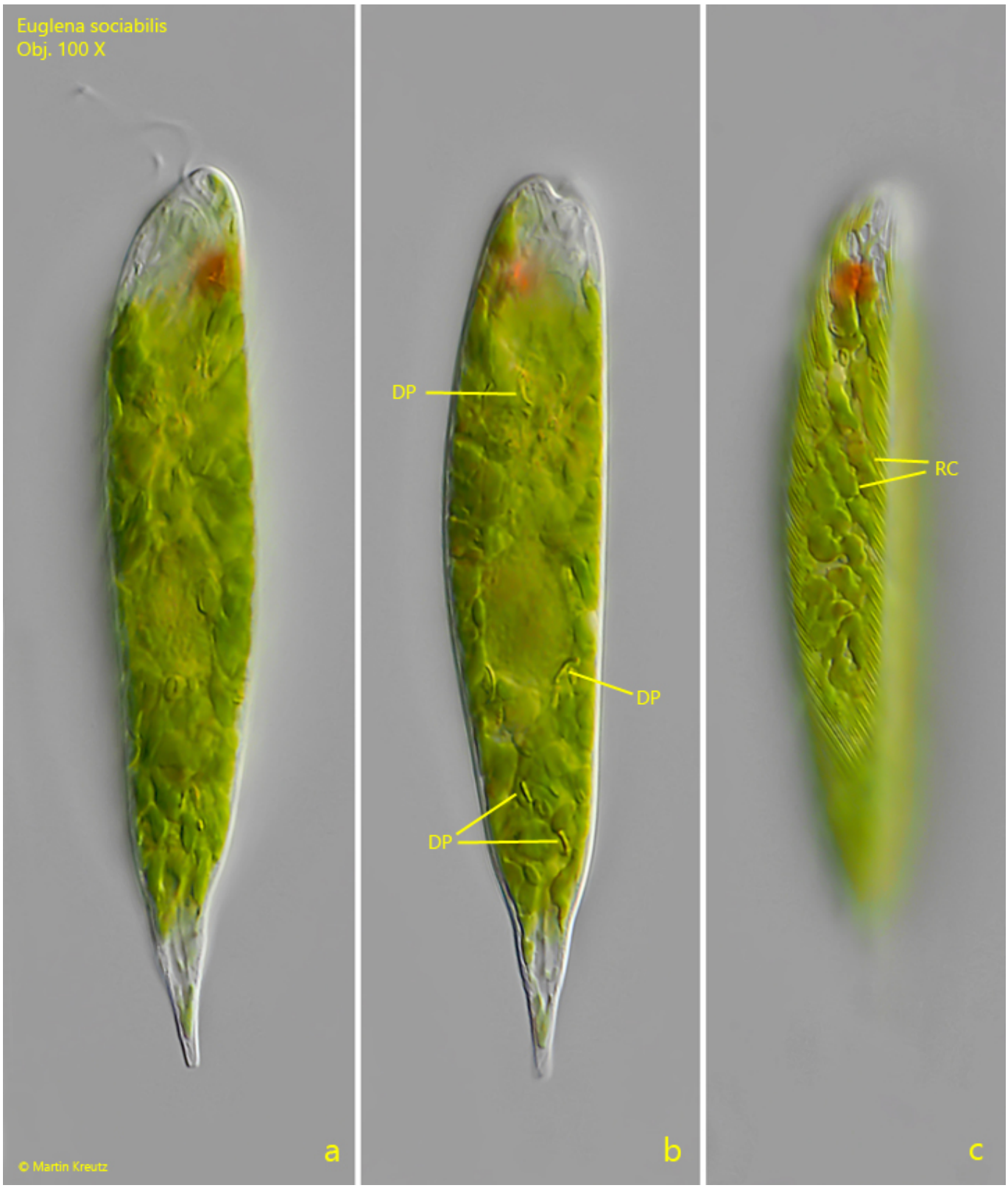


Fig. 3 a-c: *Euglena sociabilis*. L = 91 µm. A second, freely swimming specimen. Note the watchglass-shaped sheaths of paramylon covering the diplopyrenoids (DP). RC = ribbon-shaped chloroplasts. Obj. 100 X.

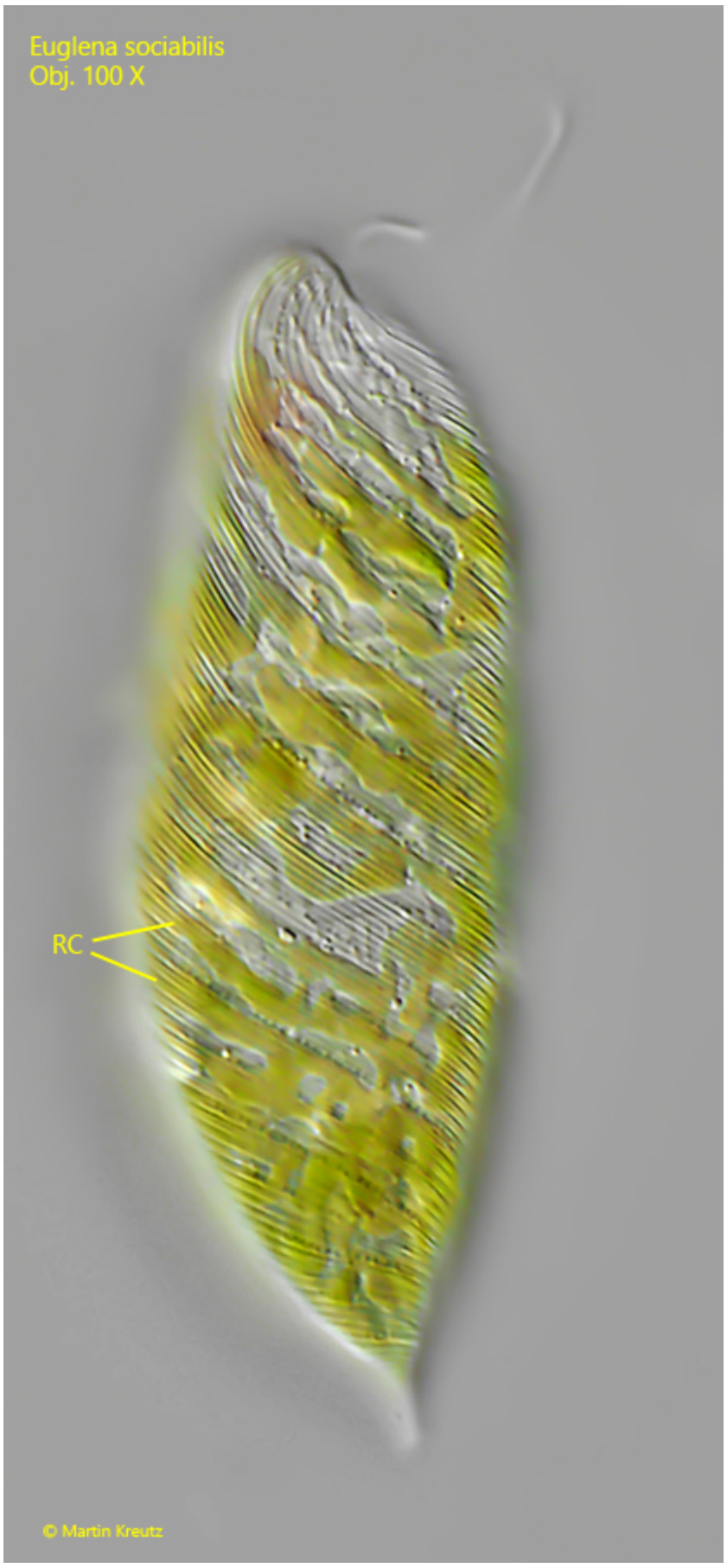


Fig. 4: *Euglena sociabilis*. The ribbon-shaped chloroplasts (RC) with indented margins in a slightly squashed specimen. Obj. 100 X.

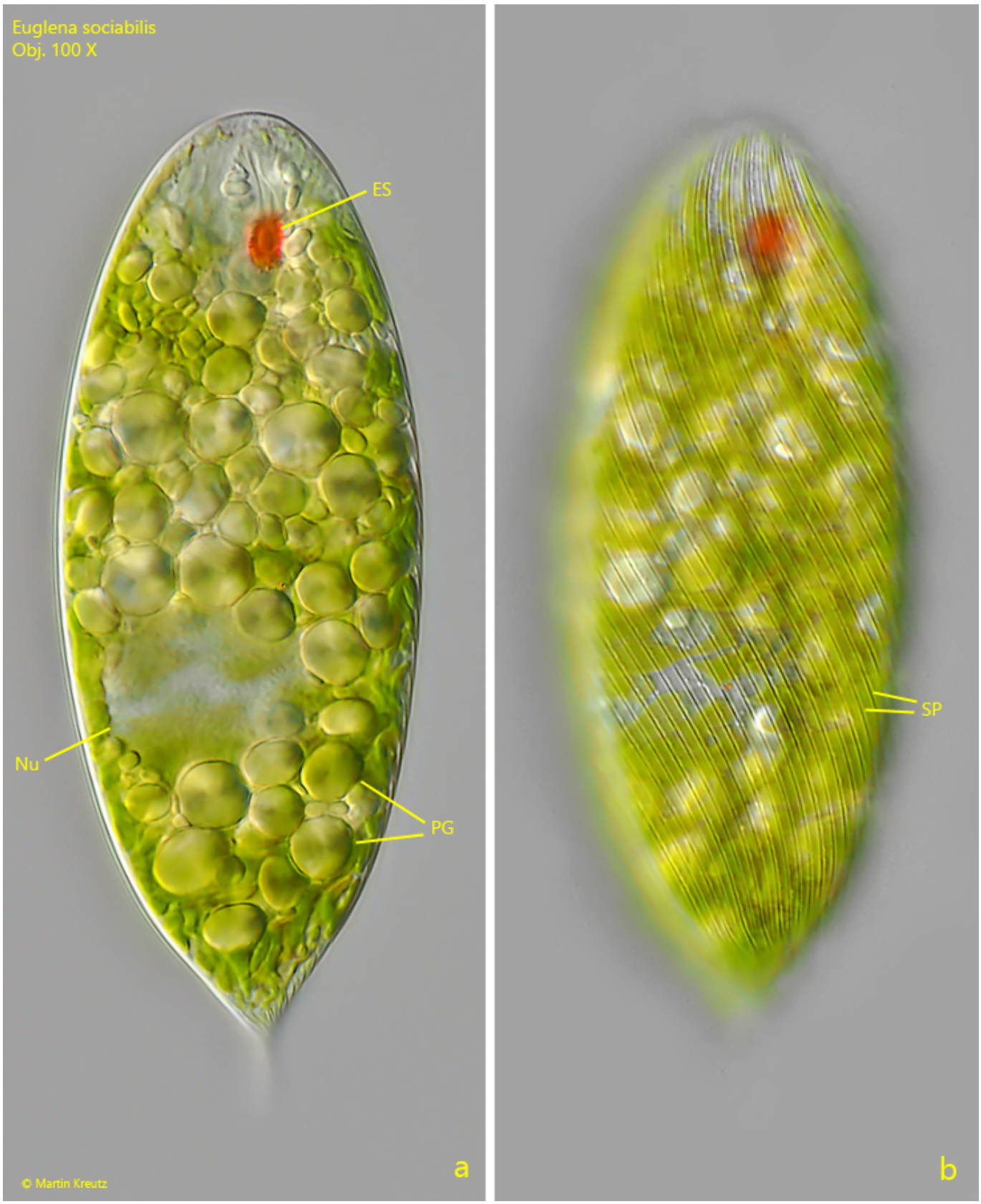


Fig. 5 a-b: *Euglena sociabilis*. Focal planes on the paramylon grains (PG) and the striation of the pellicle (SP) of a slightly squashed specimen. ES = eyespot, NU = nucleus. Obj. 100 X.

Fig. 6: *Euglena sociabilis*. The watchglass-shaped sheaths of paramylon covering the diplopyrenoids (arrows) in a strongly pressed specimen. Obj. 100 X.