Euglena hemichromata Skuja, 1948

Most likely ID: n.a.

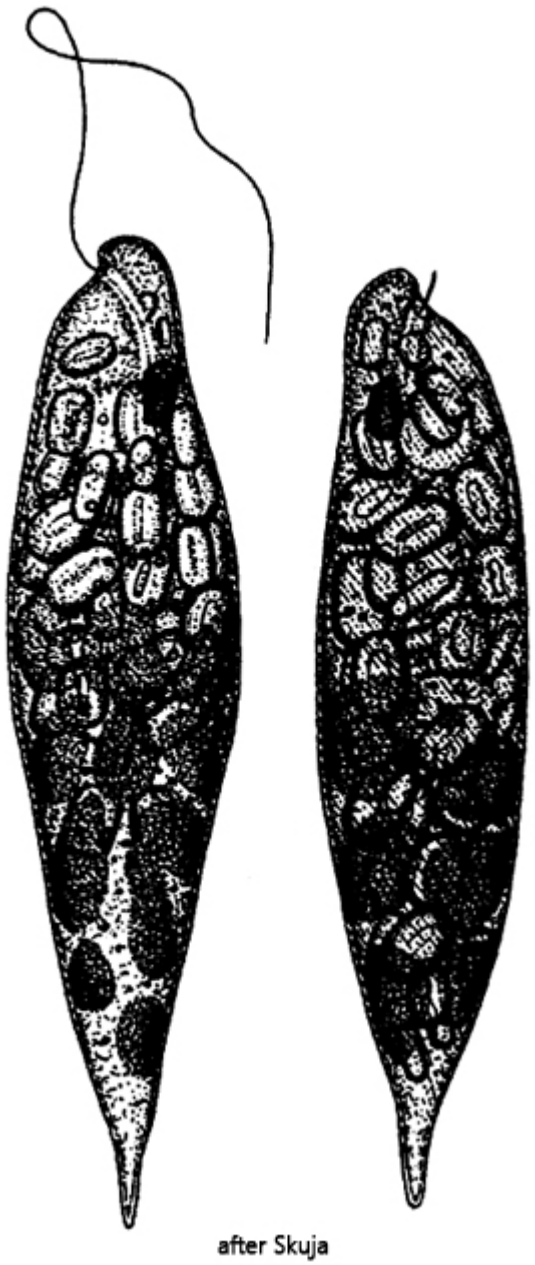
Synonym: n.a.

Sampling location: Simmelried

Phylogenetic tree: *Euglena hemichromata*

Diagnosis:

- cells spindle-shaped
- length 62–128 µm
- anteriorly narrowed and truncate
- eyespot large
- posterior tail-shaped
- pellicle with distinct spirally striation, counterclockwise
- anterior half of cell filled with paramylon grains
- posterior half filled with chloroplasts
- paramylon grains of different size, broadly cylindrical or oval
- chloroplasts short ribbons, disc-shaped or irreklarly shaped
- pyrenoids absent
- flagellum of body length



Euglena hemichromata

I find *Euglena hemichromata* frequently and regularly in the Simmelried. The specimens are usually found in the uppermost mud layer. I have not yet been able to find *Euglena hemichromata* in my other locations.

Euglena hemichromata is very easy to recognize and identify due to the two-coloured cells. The anterior half is usually colorless or slightly brownish and completely filled with paramylon grains, while the posterior half is green due to chloroplasts of the cell which are located there (s. fig. 1 a-c). Because the chloroplasts are densely packed in the posterior half, their shape is difficult to recognize. In this species, the shape can vary between short ribbon-shaped, disc-shaped or even irregularly shaped plates. In my population they were mostly short

ribbons (s. fig. 3 a).

In my population of *Euglena hemichromata* I could recognize numerous spindle-shaped mucocysts under the pellicle (s. figs. 2 and 3 a), which are not mentioned by Skuja (1948). I do not know whether these are only formed temporarily or are permanently present.

In young cells of *Euglena hemichromata*, the chloroplasts are still distributed throughout the cell, which makes identification very difficult. At this stage, *Euglena hemichromata* is very similar to *Euglena viridis*. Only with the increasing formation of paramylon, the chloroplasts are displaced to the posterior end of the cell, resulting in the typical two-colored appearance.

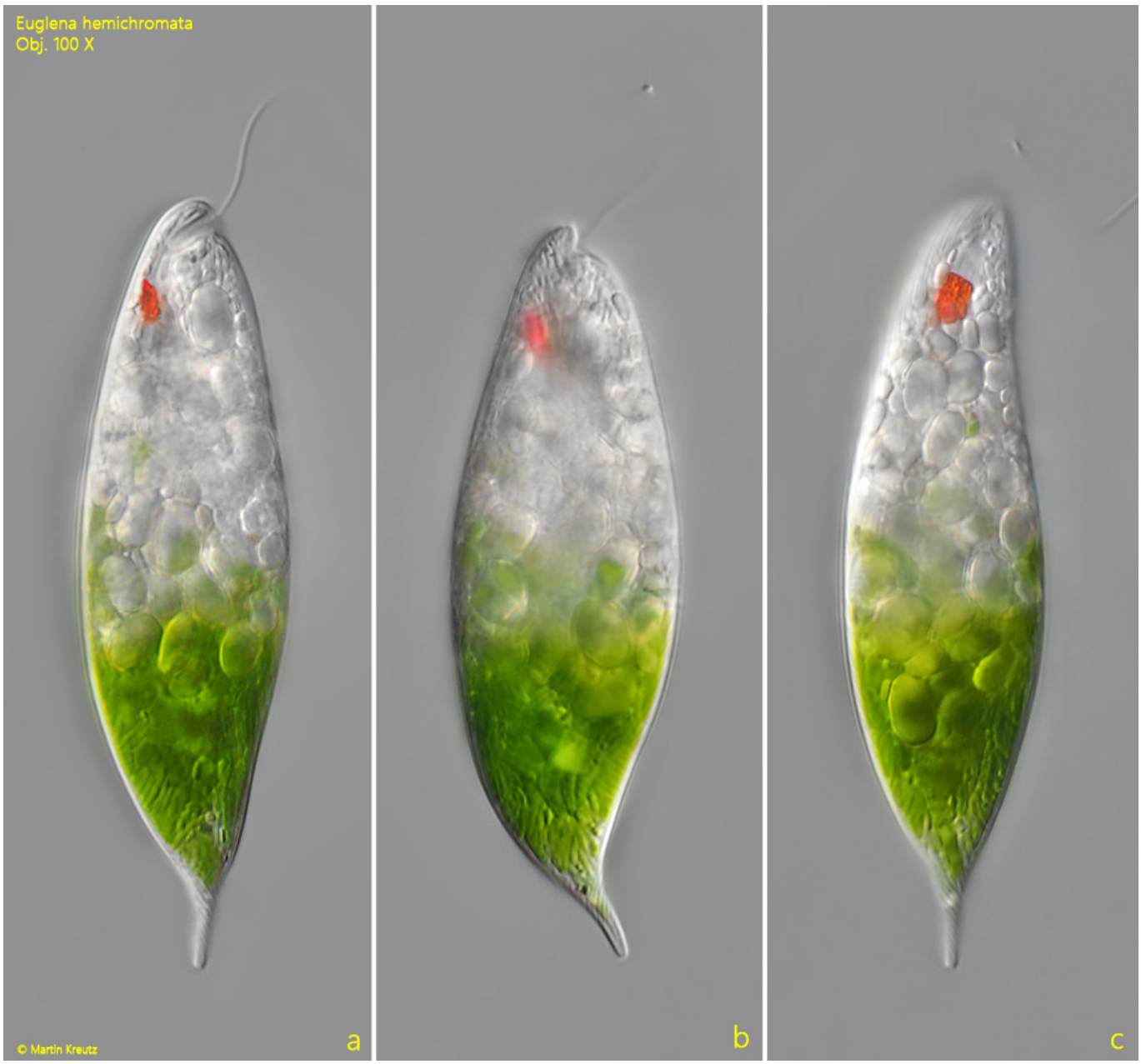


Fig. 1 a-c: *Euglena hemichromata*. L = 74 µm. A freely swimming specimen. Obj. 100 X.

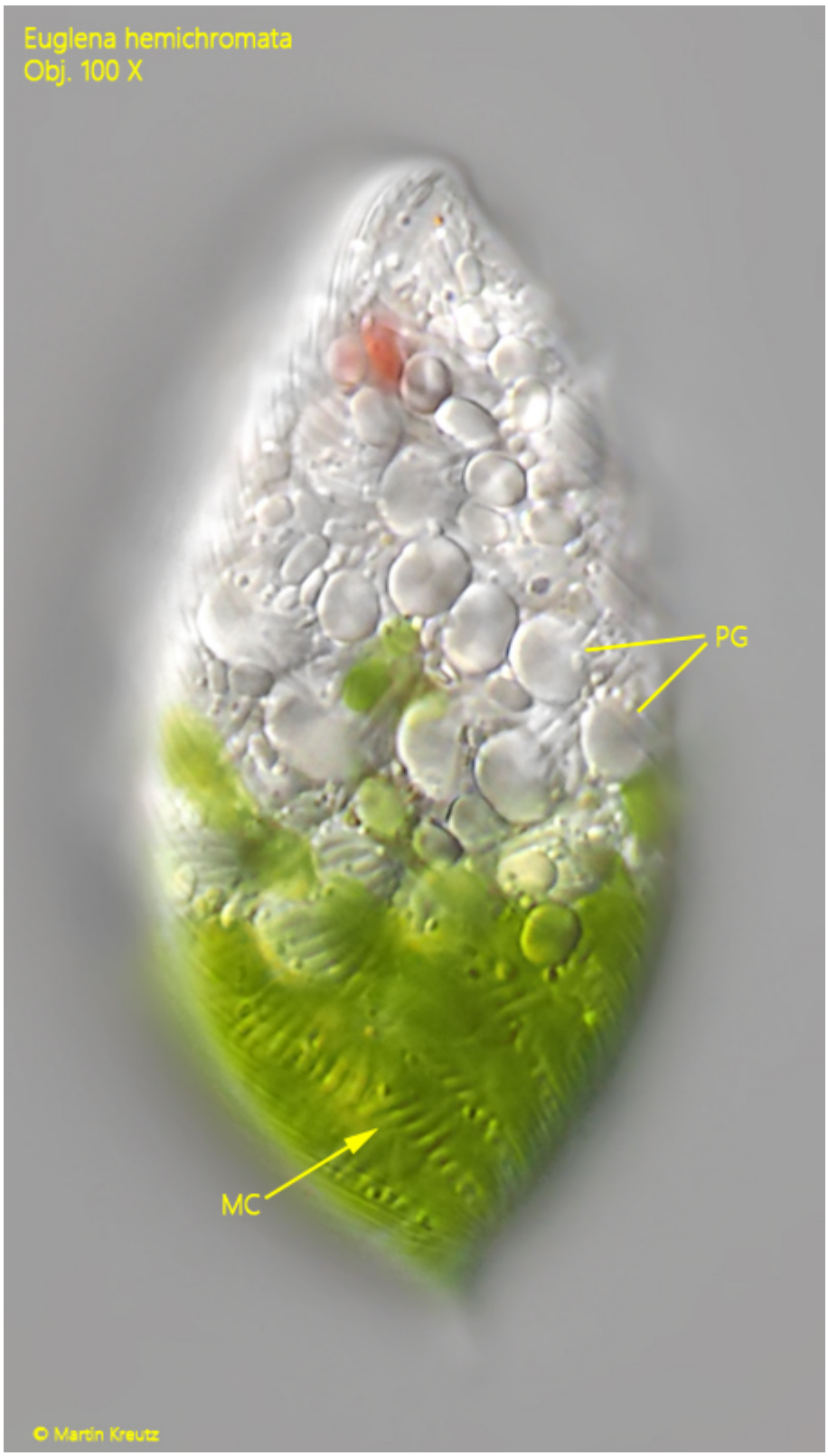


Fig. 2: *Euglena hemichromata*. The slightly squashed specimen as shown in fig. 1 a-c. Note the spindle-shaped mucocysts (MC) beneath the pellicle. PG = paramylon grains. Obj. 100 X.

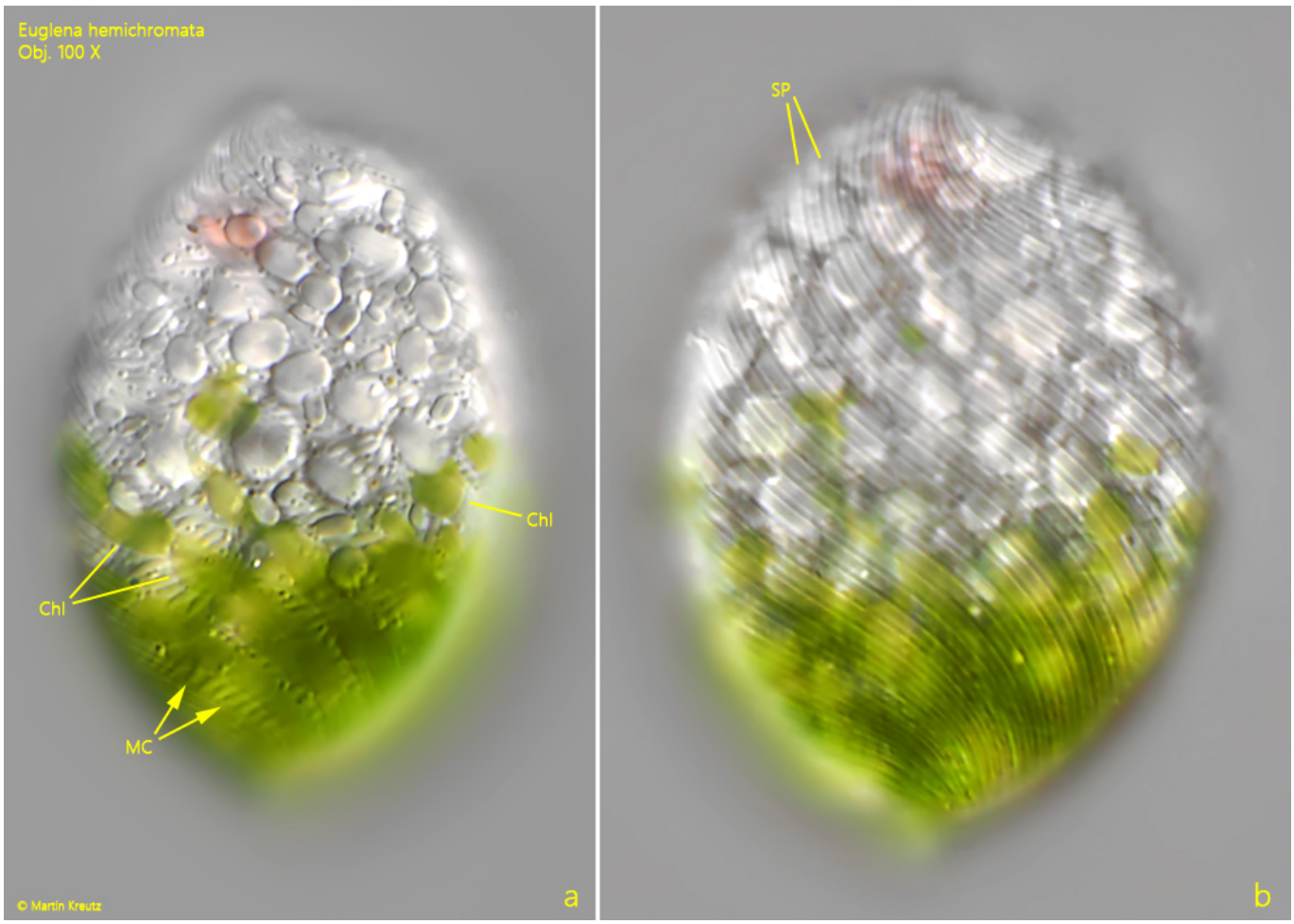


Fig. 3 a-b: *Euglena hemichromata*. Two focal planes of a squashed specimen. The chloroplasts (Chl) of this specimen are short ribbons and irregularly shaped discs. The striation of the pellicle (SP) is distinct and running conterclockwise to the posterior end. MC = mucocysts. Obj. 100 X.

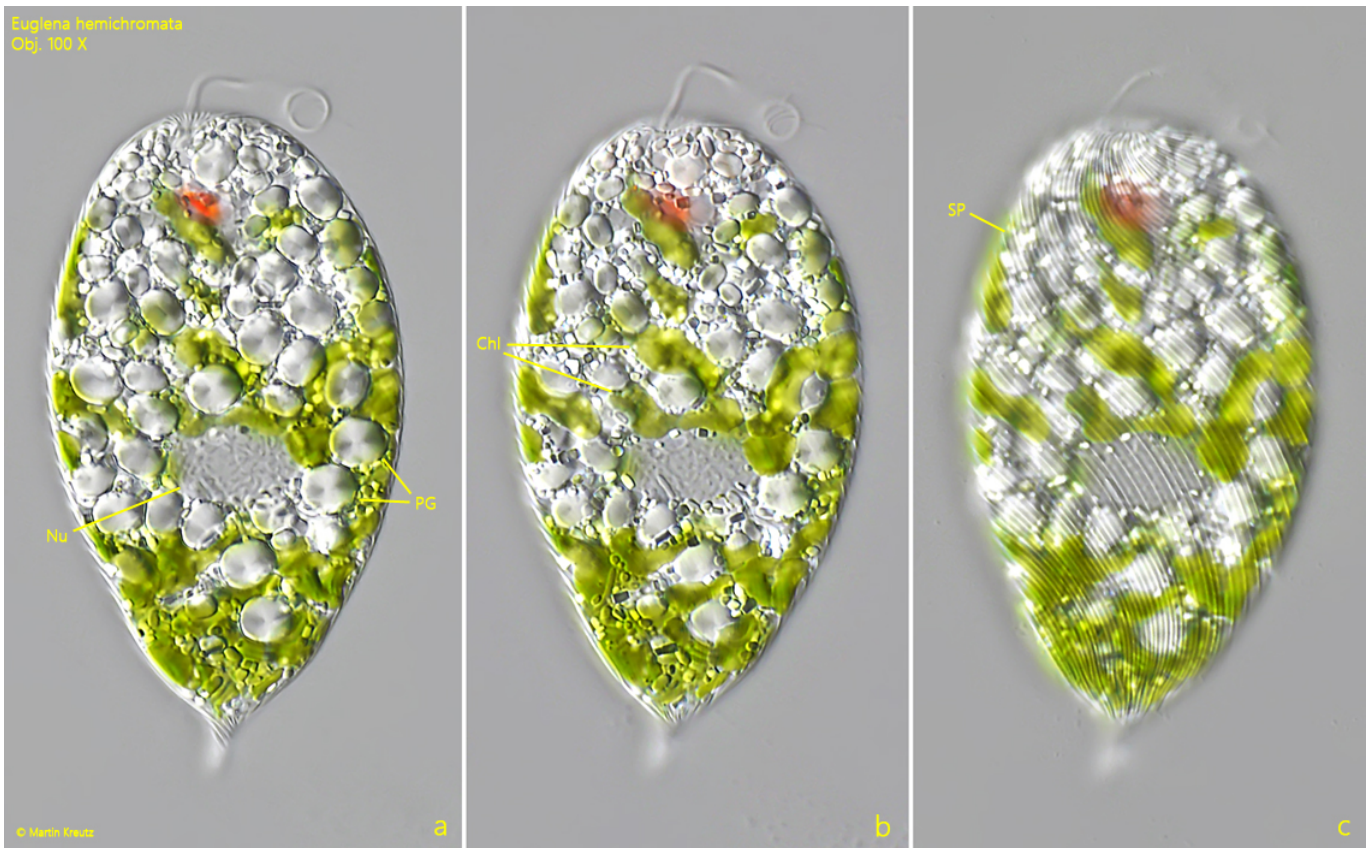


Fig. 4 a-c: *Euglena hemichromata*. Three focal planes of a strongly squashed. Note the ribbon-shaped chloroplasts (Chl). Nu = nucleus, PG = paramylon grains, SP = striation of the pellicle. Obj. 100 X.