## *Chroococcus giganteus* West, 1892

**Most likely ID:** n.a.

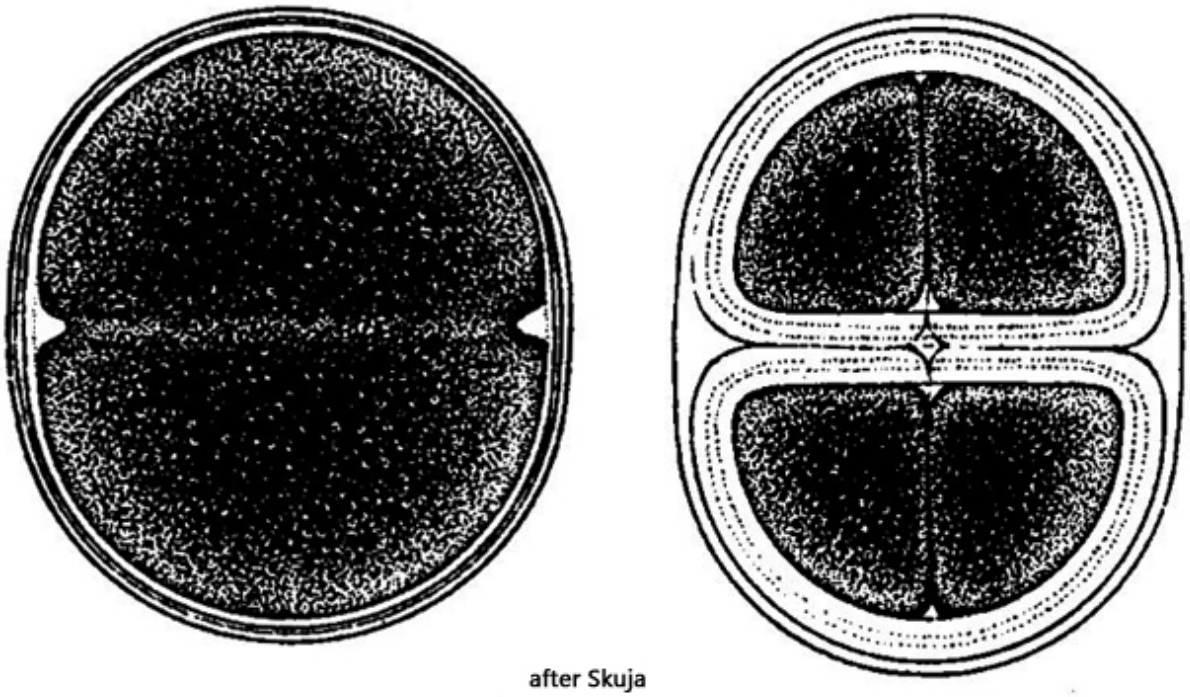
**Synonym:** n.a.

**Sampling location:** Simmelried, Pond of convent Hegne

**Phylogenetic tree:** *Chroococcus giganteus*

**Diagnosis:**

- cells spherical, subspherical or hemispherical (after division)
- cells 48–65 µm (without sheath)
- two-cell colonies 80–107 µm in diameter (without sheath)
- colonies of 2–4 cells, no larger aggregates
- layered sheath (after each division a new layer)
- sheath colorless, tightly fitting
- color of cells olive green, grayish-blue or violet, never bluegreen



after Skuja

Chroococcus giganteus

*Chroococcus giganteus* is one of the cyanobacteria with the largest cells. Colonies are usually found with 2 or 4 cells and the division stages in between. Round single cells can only be found very rarely.

The appearance of *Chroococcus giganteus* is very characteristic, but it is difficult to distinguish it from the similar species *Chroococcus turgidus*. The only distinguishing feature seems to be the size of the individual cells and the color of the cells. The individual cells of *Chroococcus turgidus* are reorted to measure up to 32 µm and are clearly blue-green in color. For the cells of *Chroococcus giganteus*, the specification 54–65 µm is repeatedly found in the literature. This range was adopted from the first description by West (1892) and has been copied by the later authors. A redescription of the *Chroococcus giganteus* by Skuja (1956) is available, in which he extends the range to 48-65 µm for a single cell. Finally, John et al. (2002) postulate that *Chroococcus turgidus* and *Chroococcus giganteus* are possibly one species because transitional forms have also been found which lie between the two size ranges.

The semi-circular cells in my population were 40-52 µm wide in the two-cell colonies. They are therefore between the stated sizes of the two species. Since the cells of all specimens I found measured at least 40 µm and the color of the cells was rather olive green, but not blue-green, I stick to the identification *Chroococcus giganteus.*

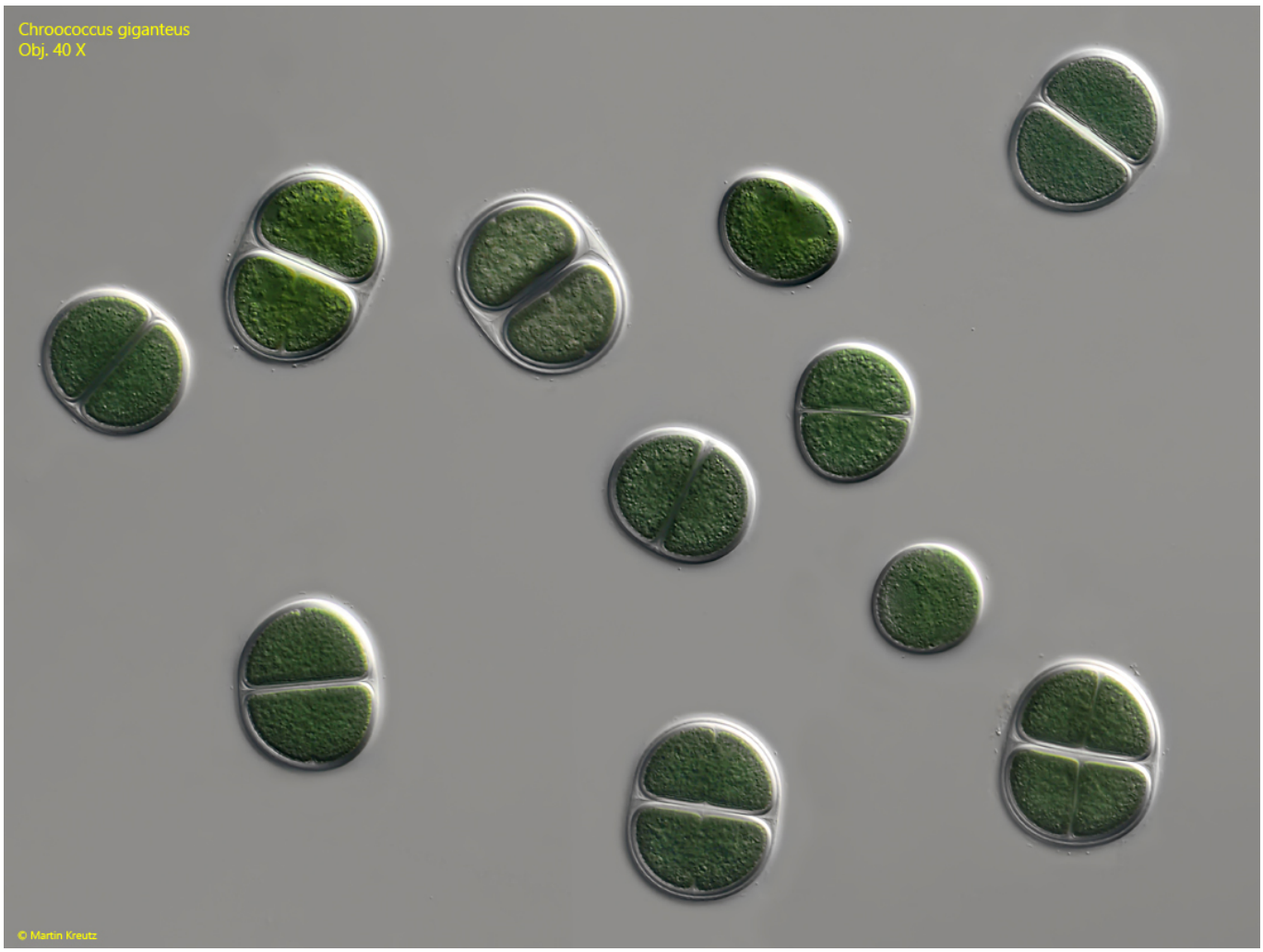



**Fig. 1:** *Chroococcus giganteus*. Overview of specimens in different cell division states. Obj. 40 X.

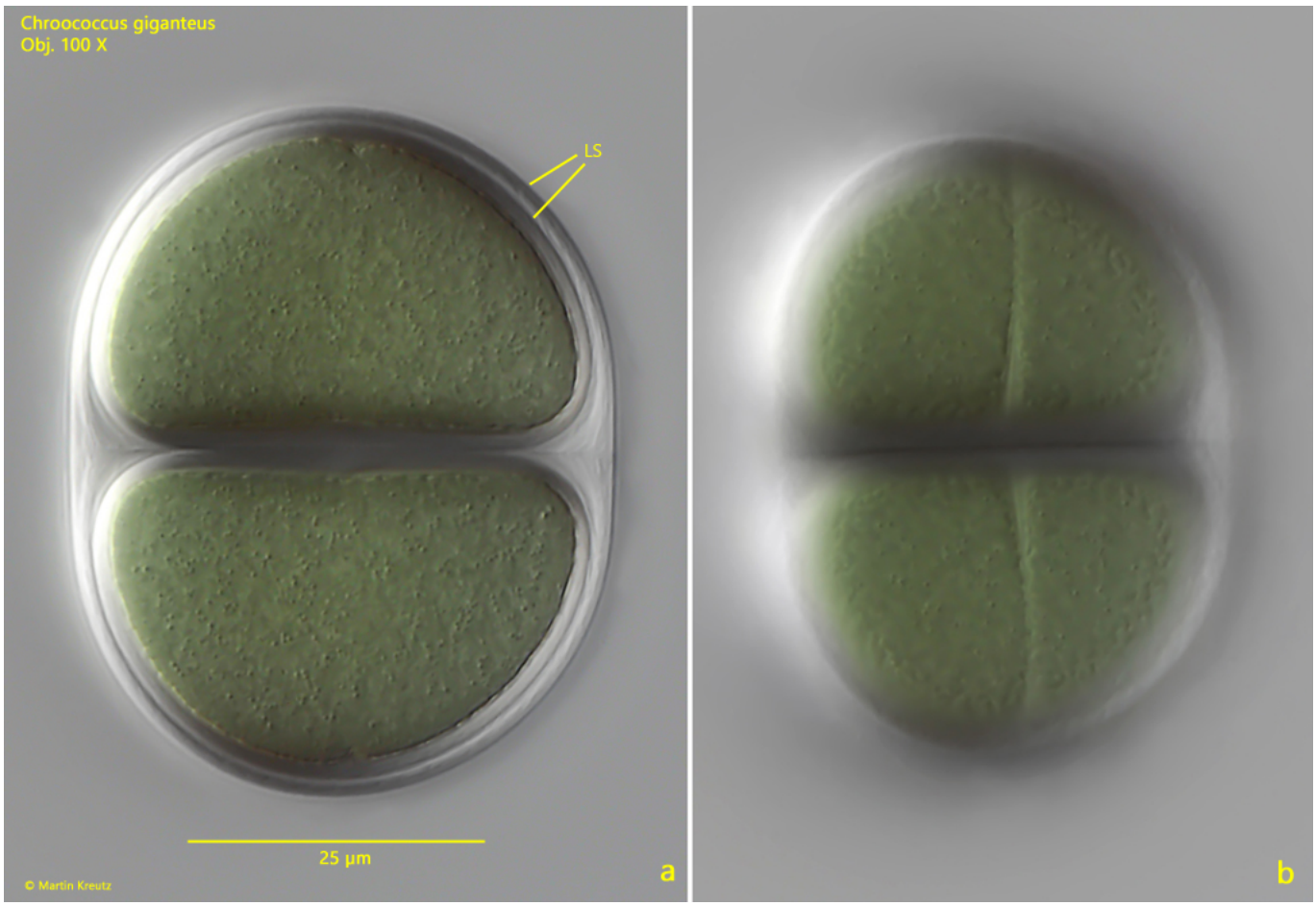



**Fig. 2 a-b:** *Chroococcus giganteus*. L = 56 µm (longitudinal axis, without sheath). An unsquashed two-cell colony during cell division (b). LS = layered sheath. Obj. 100 X.

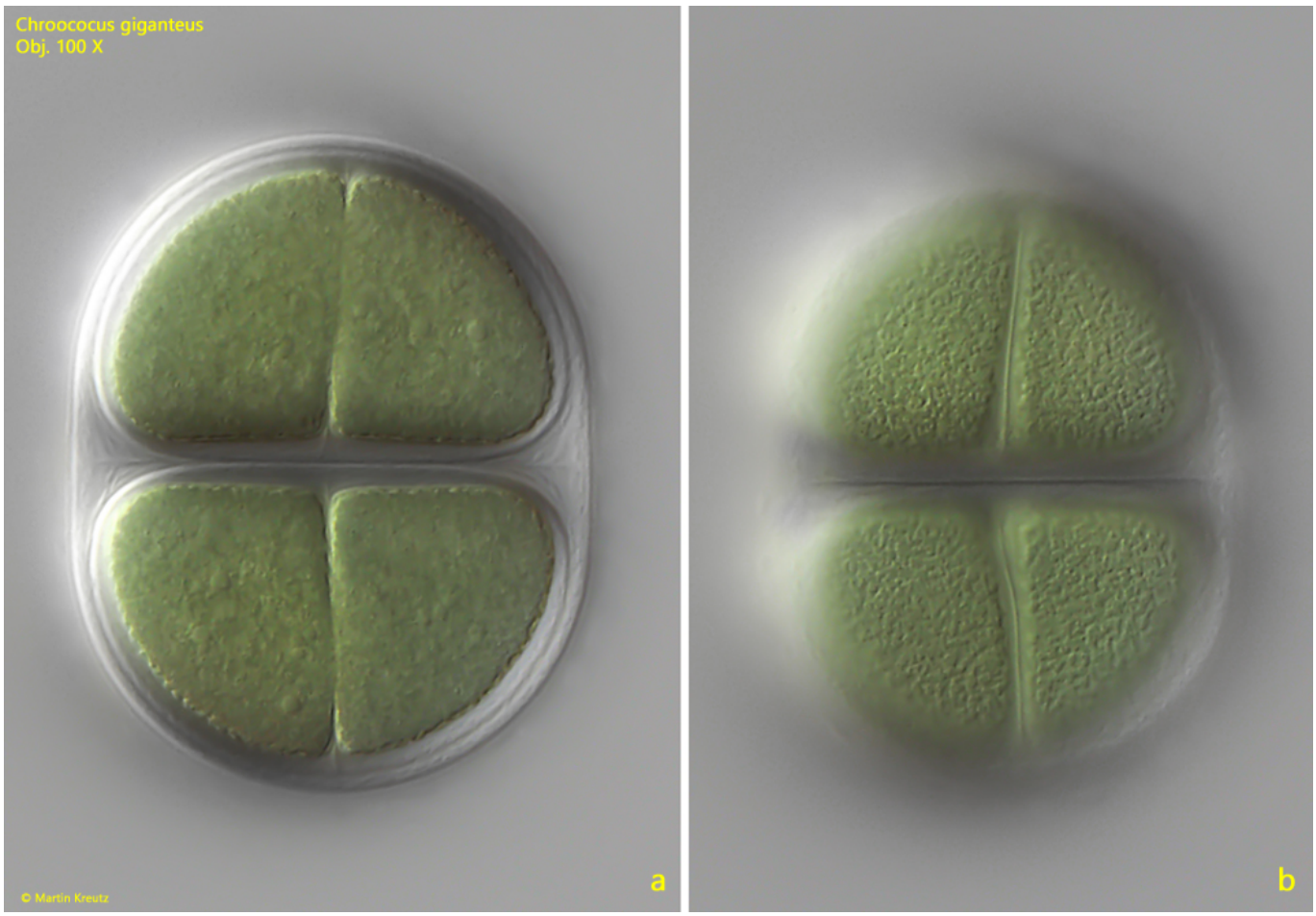



**Fig. 3 a-b:** *Chroococcus giganteus*. L = 56 µm (longitudinal axis, without sheath). A second unsquashed colony at the stage of almost finished cell division. Obj. 100 X.




**Fig. 4 a-b:** *Chroococcus giganteus*. L = 72 µm (longitudinal axis, without sheath). A four-cell colony in brightfield illumination. Obj. 100 X.