Planktothrix mougeotii

Anagnostidis & Komárek, 1988

Most likely ID: n.a.

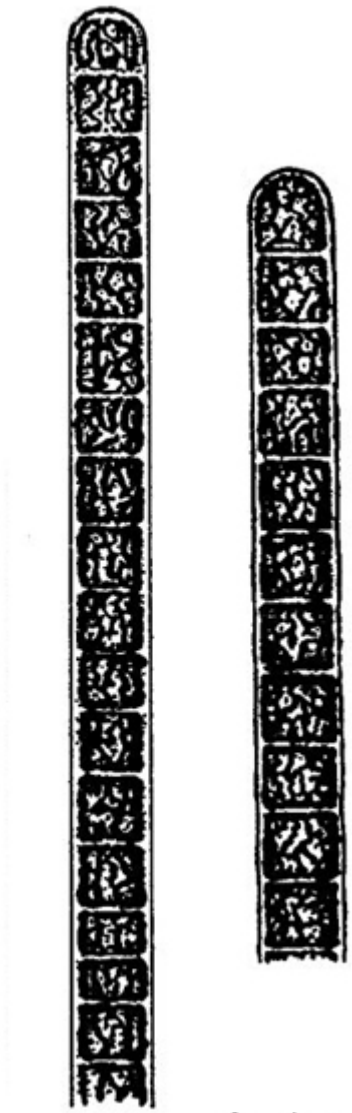
Synonym: *Oscillatoria agardhii* var. *isothrix*

Sampling location: Bussenried

Phylogenetic tree: *Planktothrix mougeotii*

Diagnosis:

- filaments solitary, straight or slightly curved
- cells 5.5–7.5 µm wide, 2–3 µm long
- green or blueish-green
- crosswalls without or with slight constriction
- gas vacuoles present
- terminal cells slightly attenuated
- sometimes with granules near crosswalls
- planktonic lifestyle



Planktothrix mougeotii

I have only found *Planktothrix mougeotii* in the Bussenried so far. A typical characteristic of the genus *Planktothrix* are the solitary filaments. They are on average 300–500 µm long. In addition, the cells of *Planktothrix* contain vacuoles filled with gas, which often makes the filaments appear blackish in transmitted light. Within the filaments there are often segments of cells that do not contain gas vacuoles (s. fig. 4 a). This is another characteristic of the genus *Planktothrix*.

The differentiation of the species is mainly based on the diameter of the filaments and the shape of the apices. In *Planktothrix mougeotii* the filaments should be 5.5–7.5 µm thick. The apices of the filaments are not or only slightly tapered and the terminal cells are rounded (s. figs 2 a-b and 3). The crosswalls show no or only slight constrictions.



Fig. 1: *Planktothrix mougeotii*. L = 120-640 µm (of filaments). Several solitary filaments in a plankton sample. Obj. 20 X.

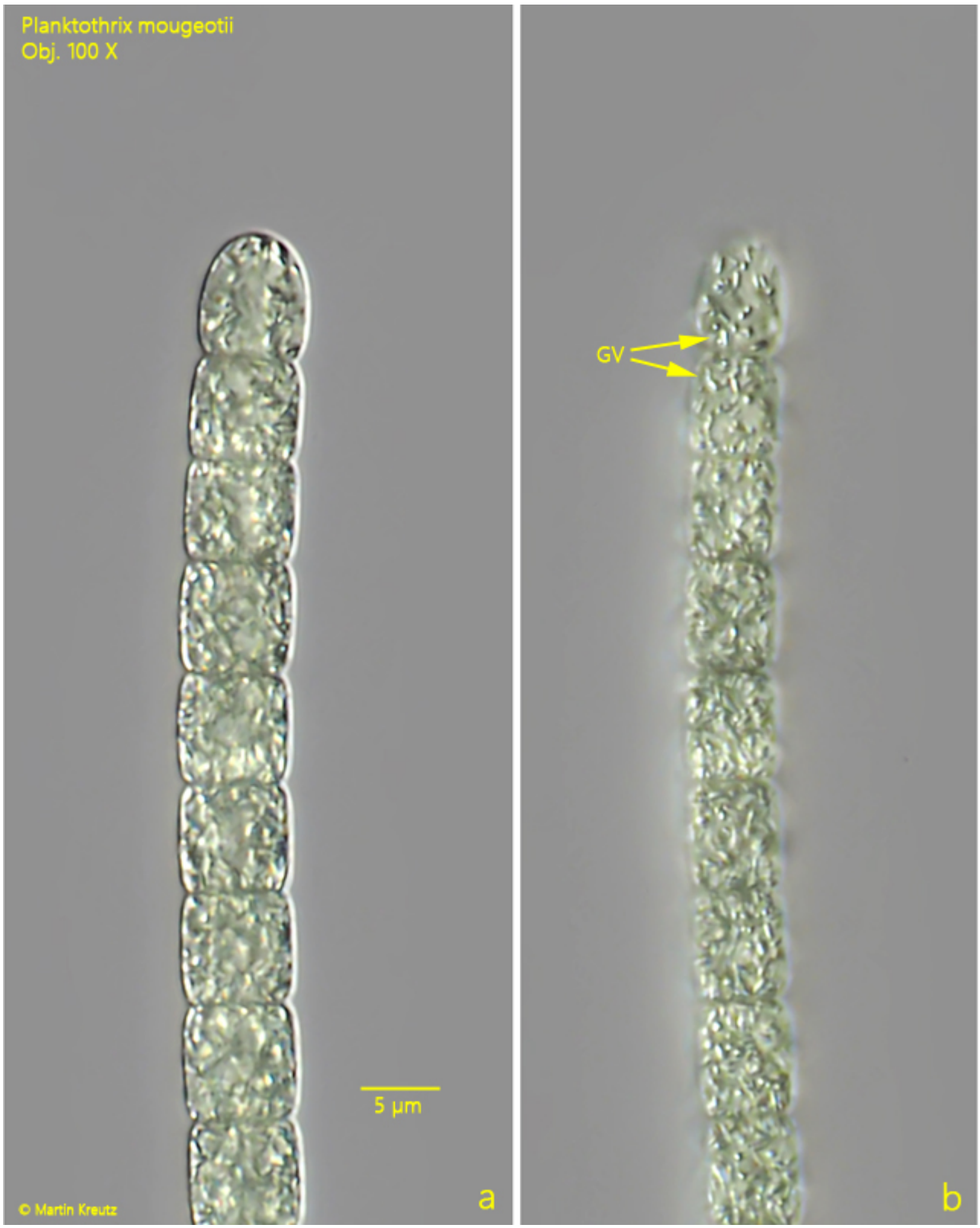


Fig. 2 a-b: *Planktothrix mougeotii*. D = 6.7 µm. Two focal planes the apex of a filament. Note the gas vacuoles (GV) scattered in the cytoplasm. Obj. 100 X.



Fig. 3: *Planktothrix mougeotii*. D = 5.6–5.7 µm. The apices of two filments in brightfiled illumination. Obj. 100 X.

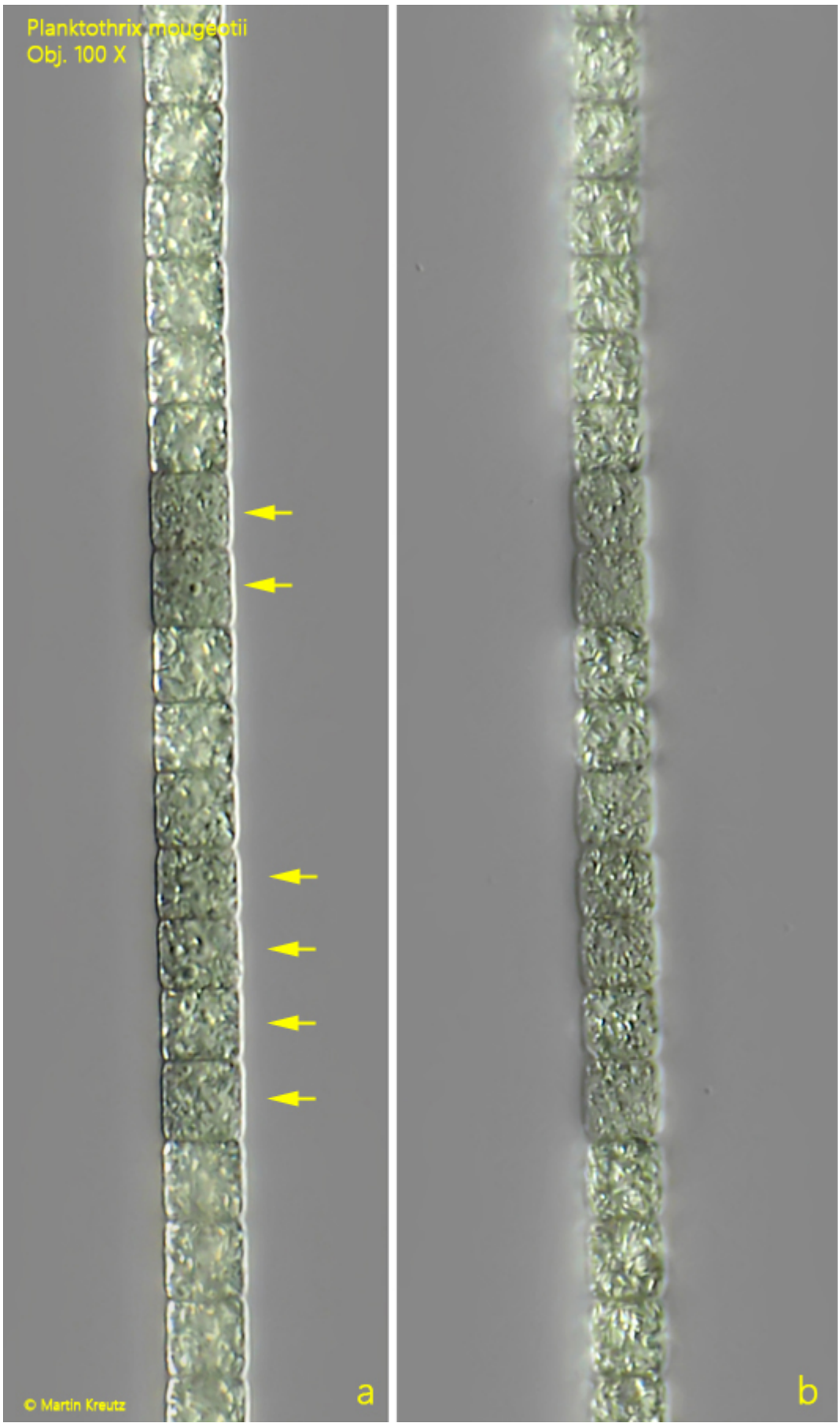


Fig. 4 a-b: *Planktothrix mougeotii*. D = 6.2 µm. Two focal planes of the middle part of a filament. Note the segments of the filament with cells with significant fewer gas

vacuoles (arrows). Obj. 100 X.



Fig. 5 a-b: *Planktothrix mougeotii*. D = 6.2 µm. The same filament as shown in fig. 4 a-b in brightfield illumination. The segments with fewer gas vacuoles appear brighter. Obj. 100 X.