Dolichospermum planctonicum

(Brunnthaler) Wacklin, L.Hoffmann & Komárek, 2009

Most likely ID: n.a.

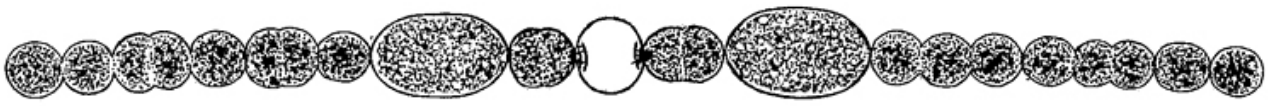
Synonyms: *Anabaena planctonica*, *Anabaena solitaria* f. *planctonica*, *Anabaena limnetica*

Sampling location: Mühlhalden pond

Phylogenetic tree: *Dolichospermum planctonicum*

Diagnosis:

- trichomes single, straight or slightly bent
- trichomes covered by gelatinous sheath, 10–20 µm thick
- vegetative cell spherical, diameter 5–12 µm
- vegetative cells with gas vacuoles
- heterocysts spherical, diameter 5–12 µm
- akinetes broad ellipsoidal, sometimes ovoid
- akinetes 20–27 µm long, width 17–19 µm
- akinetes and heterocysts separated by vegetative cells, rarely in pairs
- cells olive or olive-greenish



after Kümmerlin & Bürgi

Dolichospermum planctonicum

I found *Dolichospermum planctonicum* in August 2025 in the plankton of the Mühlhalden pond. The filaments of this cyanobacterium floated in a greenish layer on the water surface, mixed with other species of algae and cyanobacteria.

The characteristic features of *Dolichospermum planctonicum* are the ellipsoidal heterocysts and round akinetes, which are almost always separated from each other by several vegetative cells (s. figs 2 a-b and 3 a-b). Only rarely are directly adjacent pairs of akinetes or heterocysts can be found. The vegetative cells are spherical and have almost the same size as the akinetes. They contain gas vacuoles, which is why the trichomes often appear black at low magnifications. The cell walls of both the akinetes and the heterocysts are smooth without structure. The trichomes are surrounded by a clearly visible, gelatinous sheath that has a thickness of 10–20 µm (s. fig. 1).

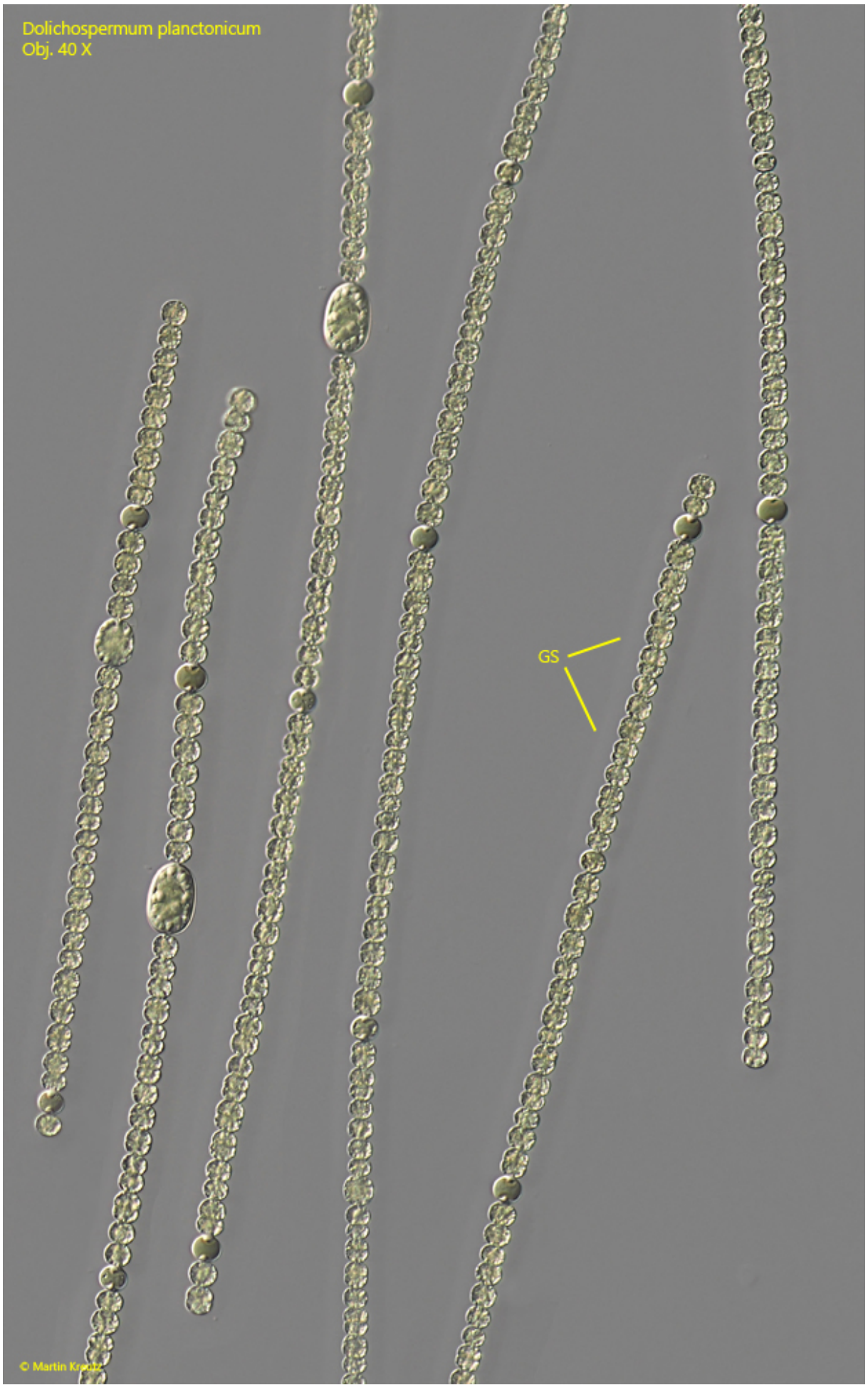

Dolichospermum planctonicum
Obj. 40 X
GS
© Martin Kreutz

Fig. 1: *Dolichospermum planctonicum*. Overview with several trichomes. Note the gelatinous sheath (GS) covering the trichomes. Obj. 40 X.

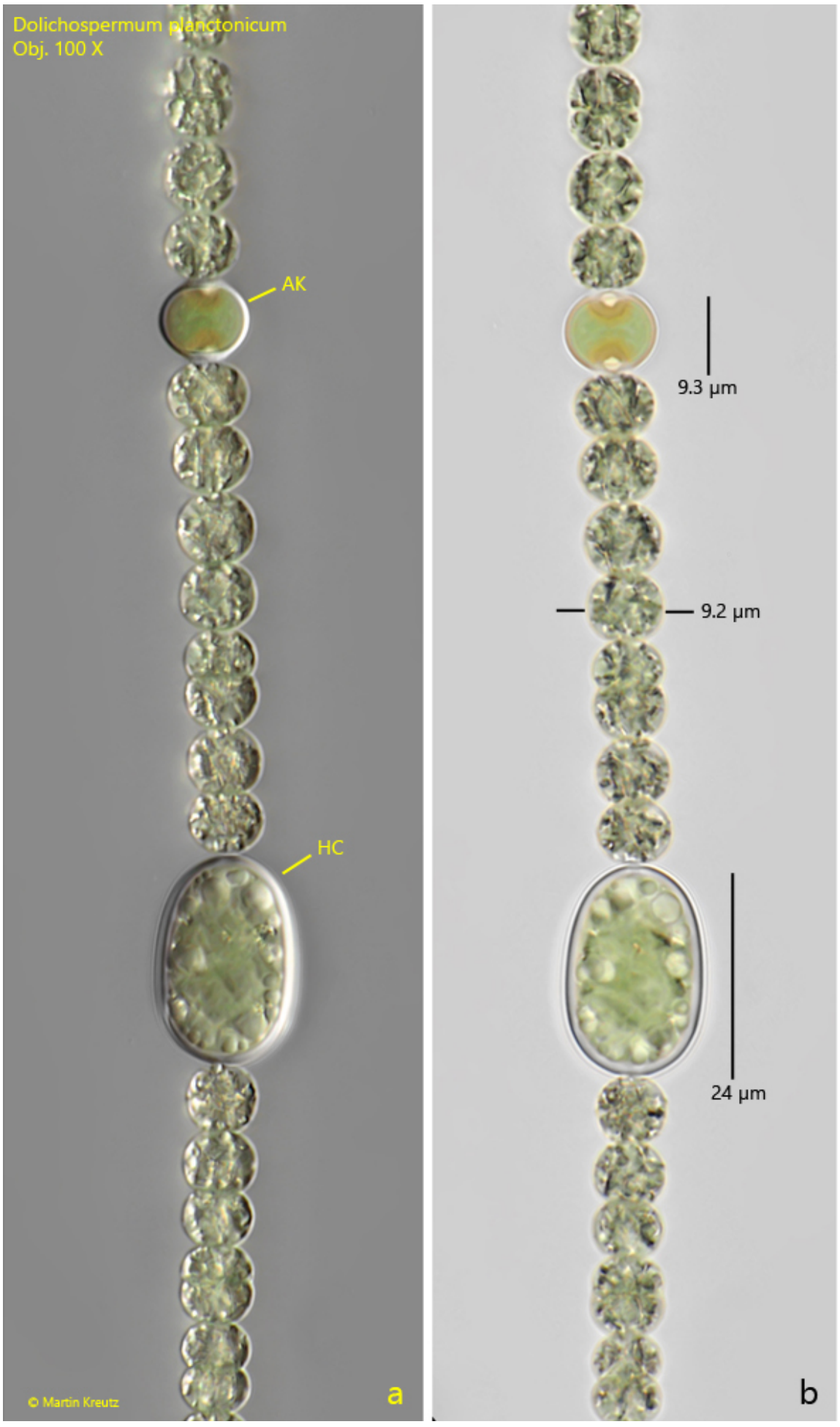

Dolichospermum planctonicum
Obj. 100 X
AK
HC
© Martin Kreutz
a
9.3 µm
9.2 µm
24 µm
b

Fig. 2 a-b: *Dolichospermum planctonicum*. A section of a filament in DIC (a) and in brightfield illumination. The spherical akinete (AK) has a diameter of 9.3 µm while the ellipsoid heterocyst (HC) has a length of 24 µm. The vegetative cells have a diameter of 9.2 µm. Obj. 100 X.

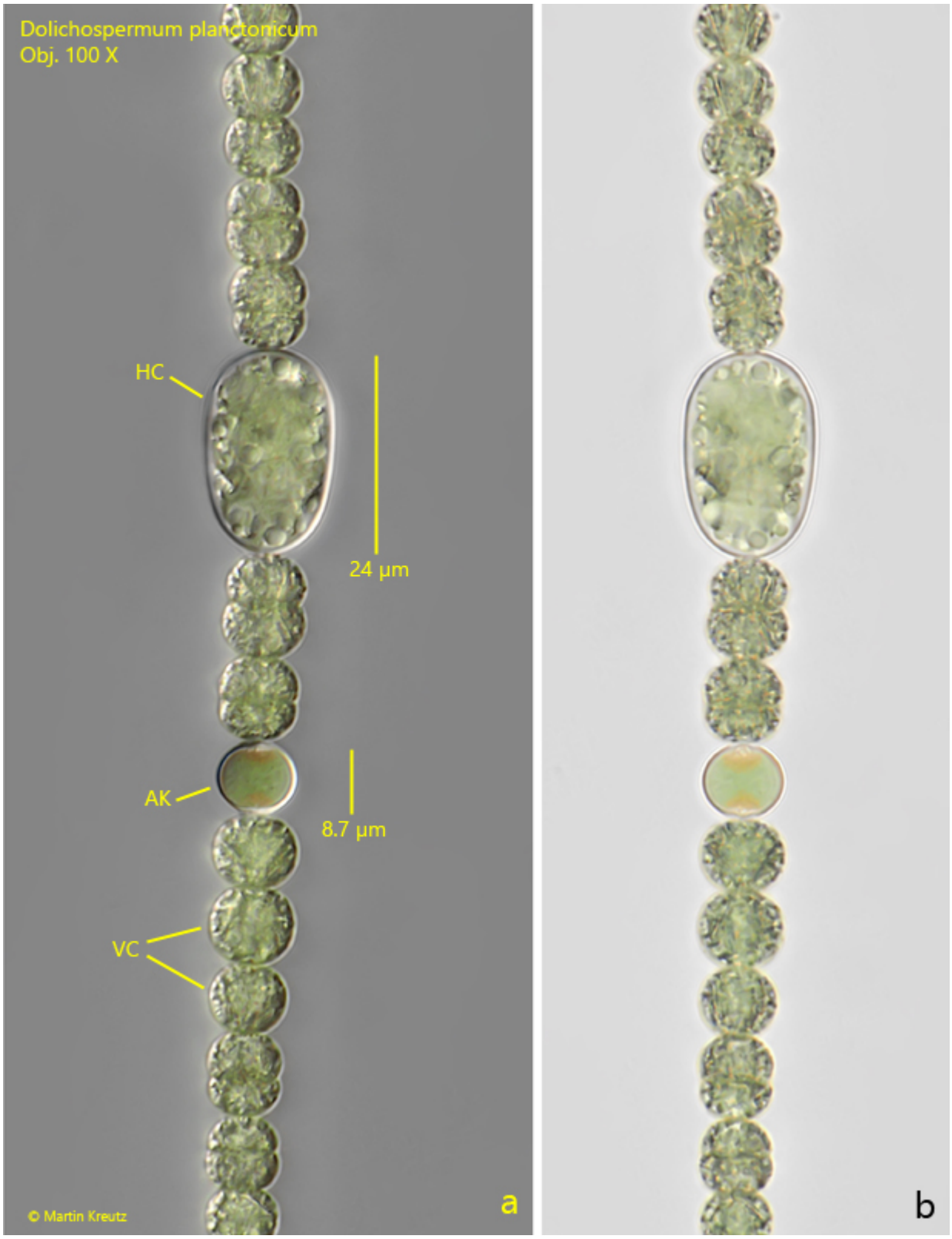


Fig. 3 a-b: *Dolichospermum planctonicum*. A second section of a filament in DIC (a) and in brightfield illumination. The spherical akinete (AK) has a diameter of 8.7 µm

while the heterocyst (HC) has a length of 24 µm. VC = vegetative cells. Obj. 100 X.