Uroglena volvox Ehrenberg, 1834

Most likely ID: n.a.

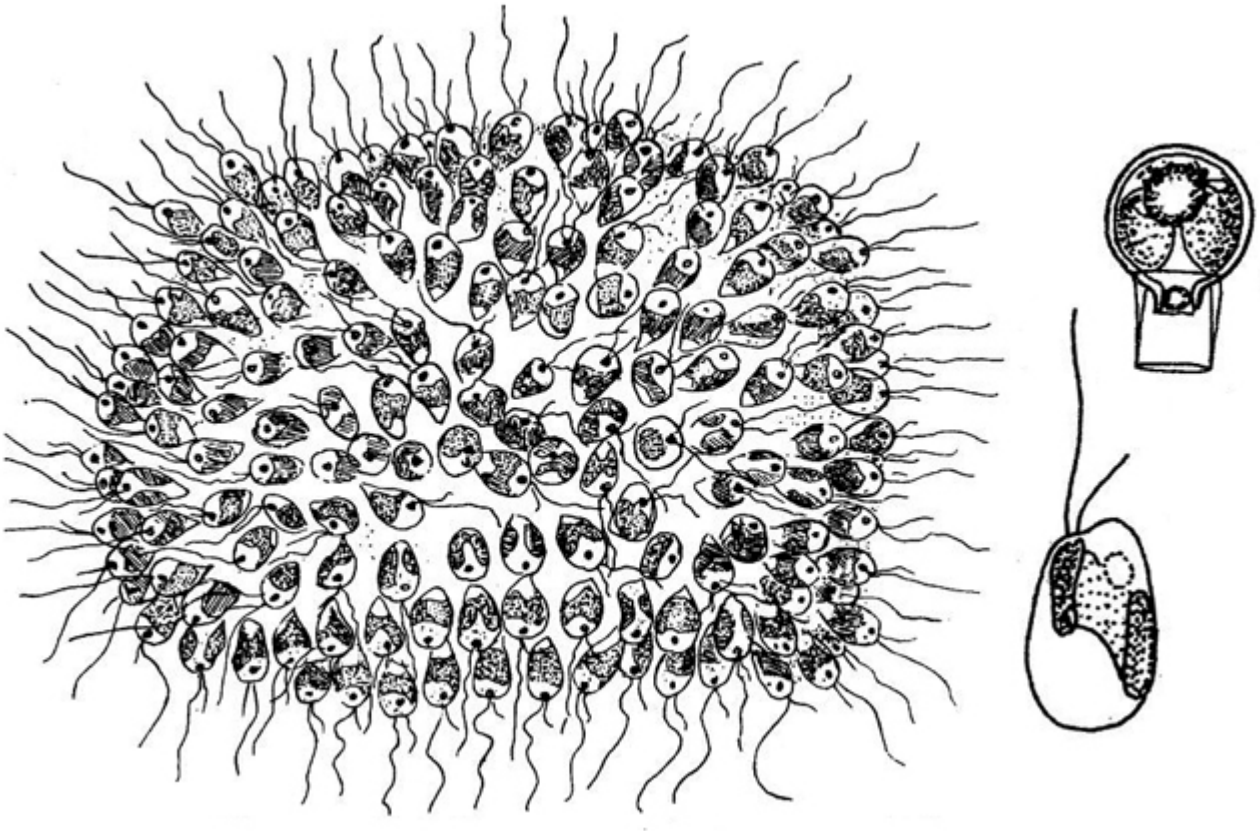
Synonym: n.a.

Sampling location: Ulmisried, Simmelried, Mühlhalden pond, Mühlweiher Litzelstetten, Hagstaffel pond, Purren pond, Lake Constance

Phylogenetic tree: *Uroglena volvox*

Diagnosis:

- colonies spherical or almost spherical
- diameter (of colonies) 40–400 µm
- cells pear-shaped, 12–20 µm long
- cells at distal end of dichotomously branched stalks
- stalks are connected in center of colony
- one contractile vacuole at anterior end
- 2 flagella of inequal length
- one ribbon-shaped, golden-brown chloroplast
- one eyespot
- cyst spherical, smooth with double collar



Uroglena volvox

Uroglena volvox is very common in my sampling sites. I mainly find the colonies in plankton samples but also between floating plant masses.

Uroglena volvox can be recognized by the gelatinous stalks in the colony, which are already visible without staining (s. fig. 1). These stalks are not hollow (as in *Uroglena articulata*) but consist of a homogeneous gelatinous strand (s. fig. 4). The gelatinous stalks all start from a central origin in the middle of the colony (s. fig. 4). It is also important to check the number and shape of the golden-brown chloroplasts per cell. In *Uroglena volvox* there is only one ribbon-shaped chloroplast, which is spirally arranged in the longitudinal axis of the cell. Depending on the focal plane, this may give the impression that there are two chloroplasts. It is therefore important to focus carefully.

In my population I mostly found colonies below 200 µm in diameter. However, in some colonies the cells were longer than 12–20 µm, as indicated by Huber-Pestalozzi (1941). The cells reached a length of up to 30 µm, due to a tapered and elongated posterior end, with which they were attached to the gelatinous stalk (s. fig. 5). Thus the cells had the shape described for *Uroglena upplandica*. However, in all the colonies I examined, the branched gelatinous strands were clearly visible, which should not be visible in *Uroglena upplandica*.

Fig. 1: *Uroglena volvox*. D = 130 µm (of colony). A freely swimming colony of about 100 cells. Obj. 60 X.

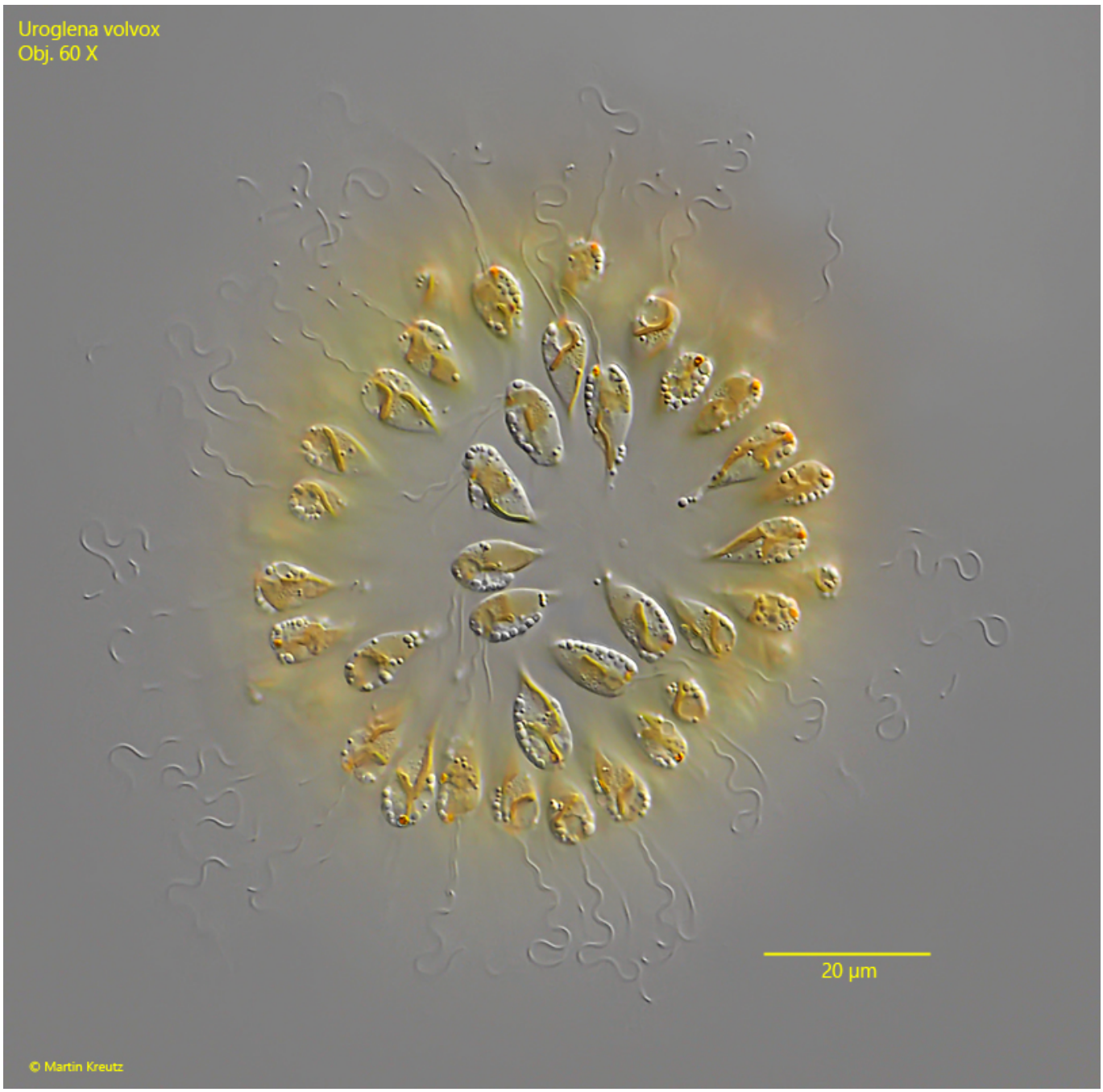


Fig. 2: *Uroglena volvox*. D = 90 µm (of colony). A second, freely swimming colony. Obj. 60 X.

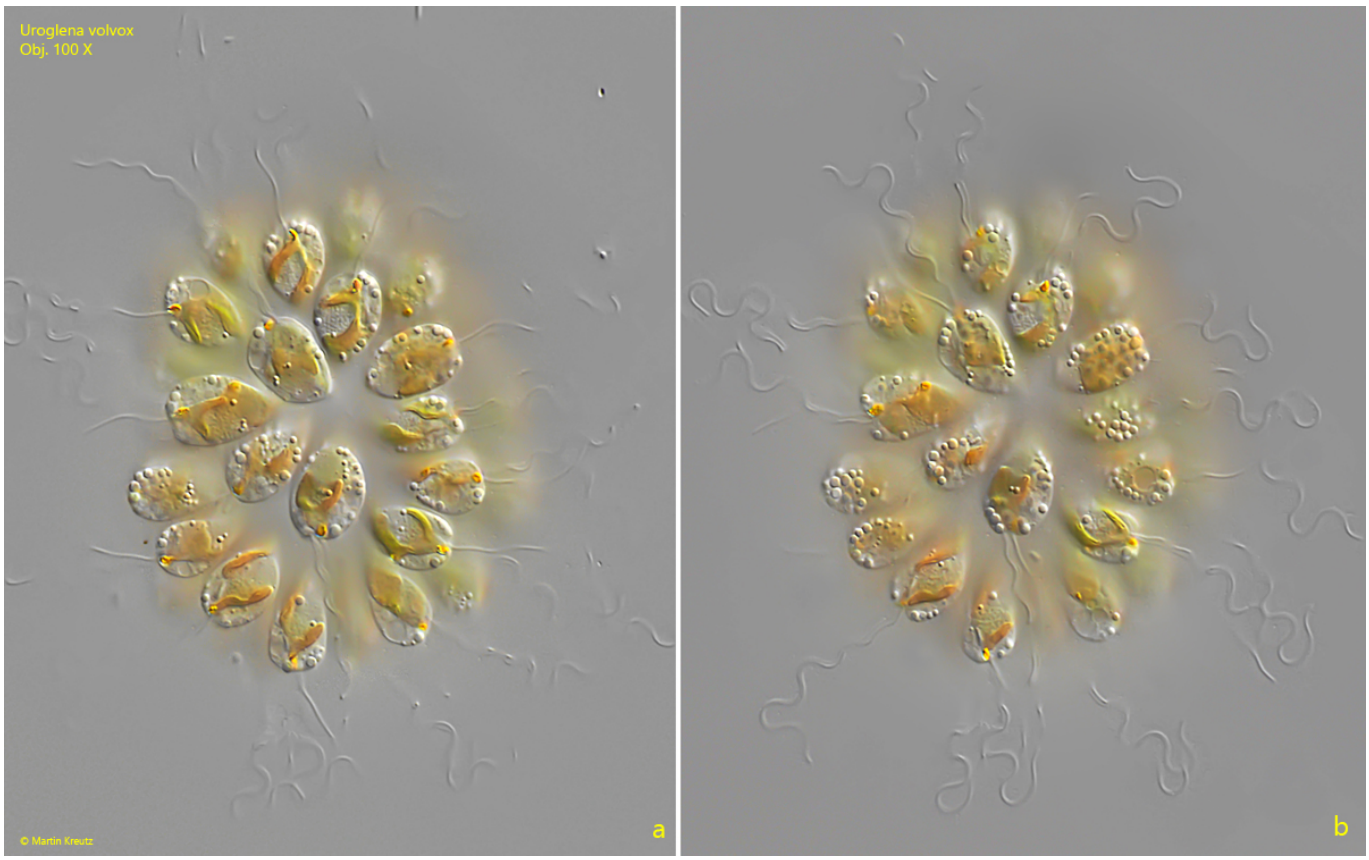


Fig. 3 a-b: *Uroglena volvox*. D = 90 µm (of colony). Two focal planes on the surface of a slightly squashed colony. Obj. 100 X.

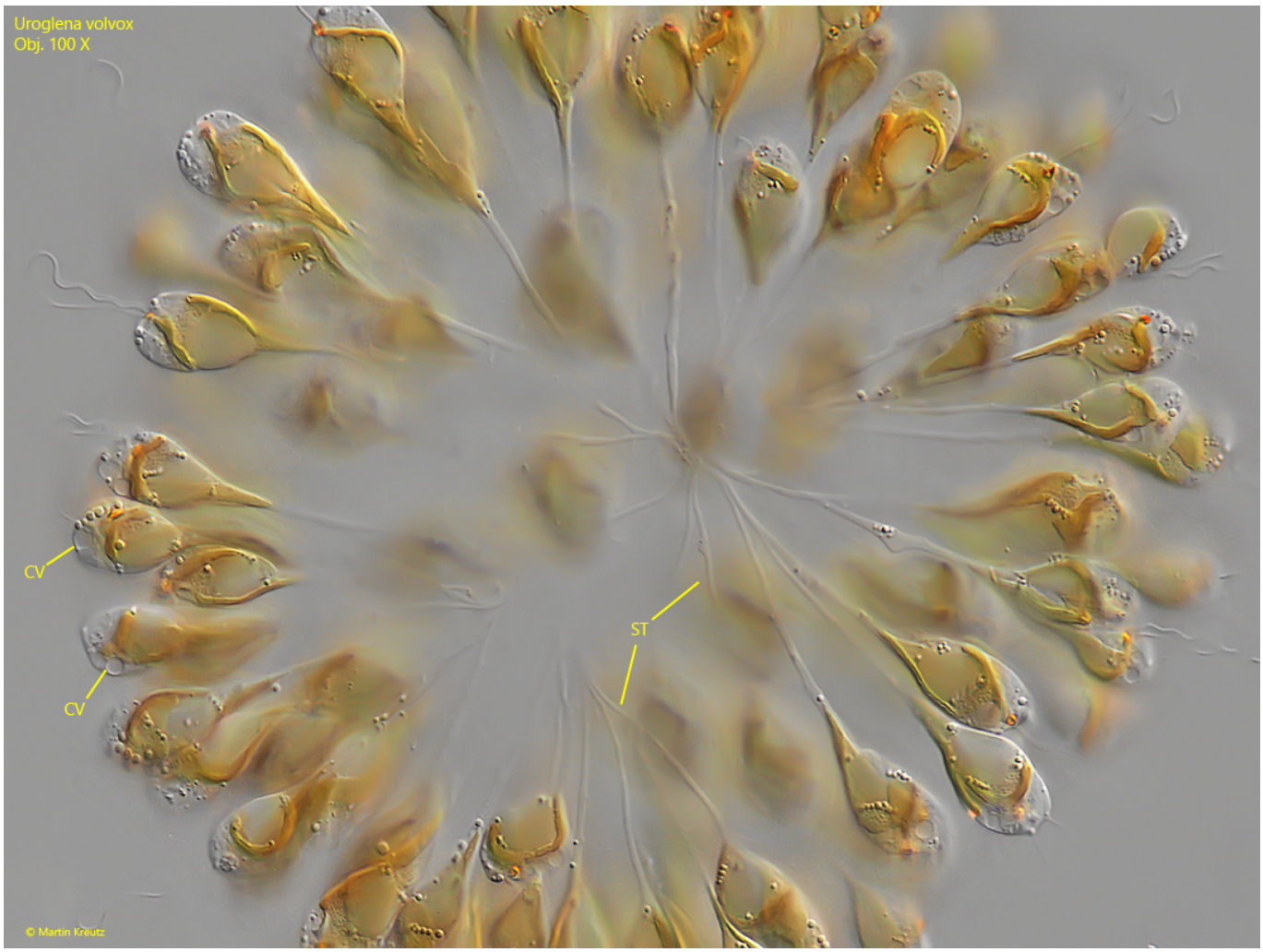


Fig. 4: *Uroglena volvox*. A slightly squashed colony to visualize the gelatinous stalks (ST) at the distal ends of which the cells are located. The gelatinous stalks have a central, common origin and are not hollow. CV = contractile vacuole. Obj. 100 X.

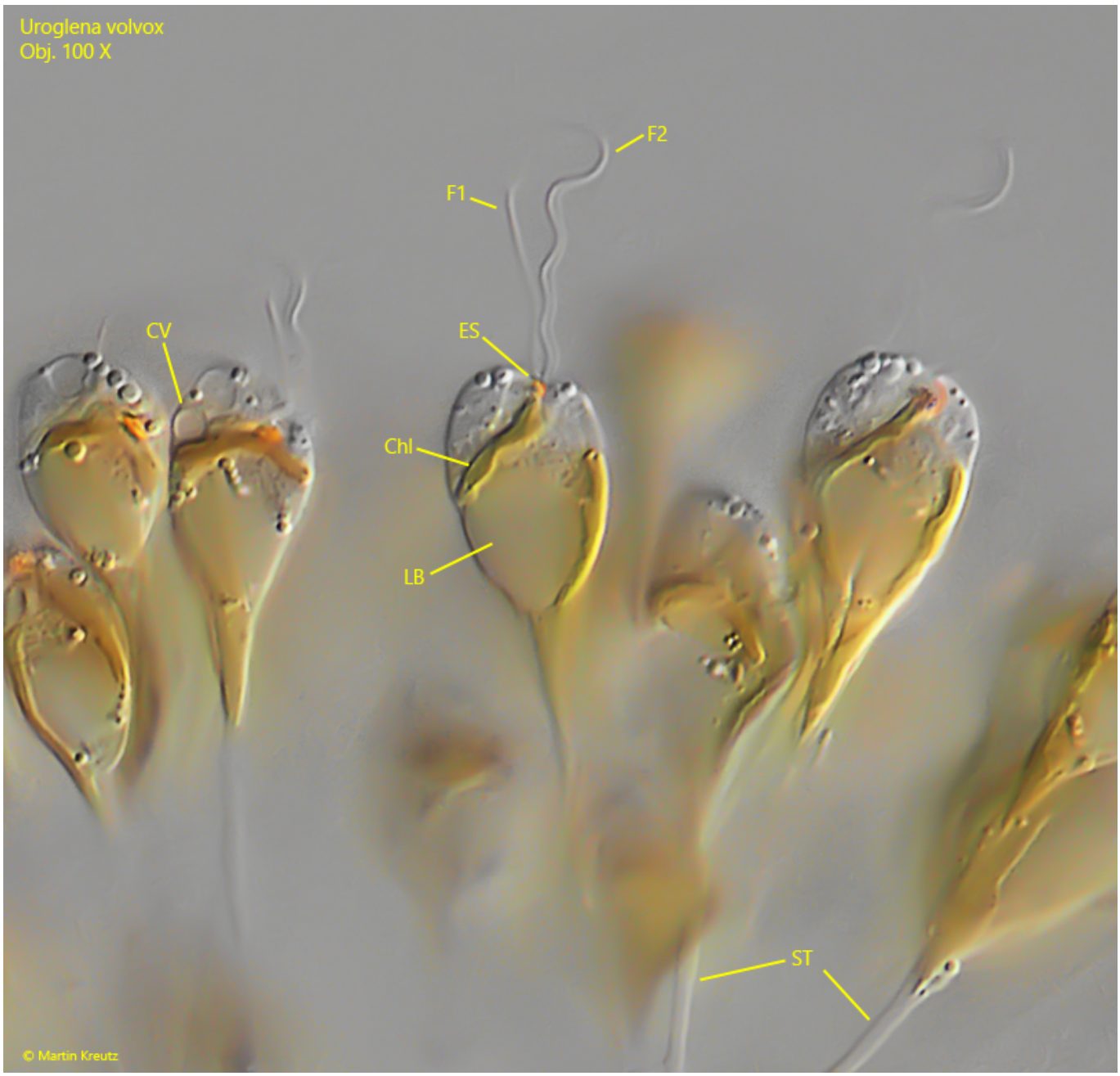


Fig. 5: *Uroglena volvox*. L = 25–30 µm (of cells). The cells of a colony in detail. Chl = ribbon-shaped chloroplast, CV = contractile vacuole, ES = eyespot, F1 = secondary flagellum, F2 = primary flagellum, LB = leukosine body, ST = stalk. Obj. 100 X.