Mallomonas caudata Iwanoff, 1899

Most likely ID: n.a.

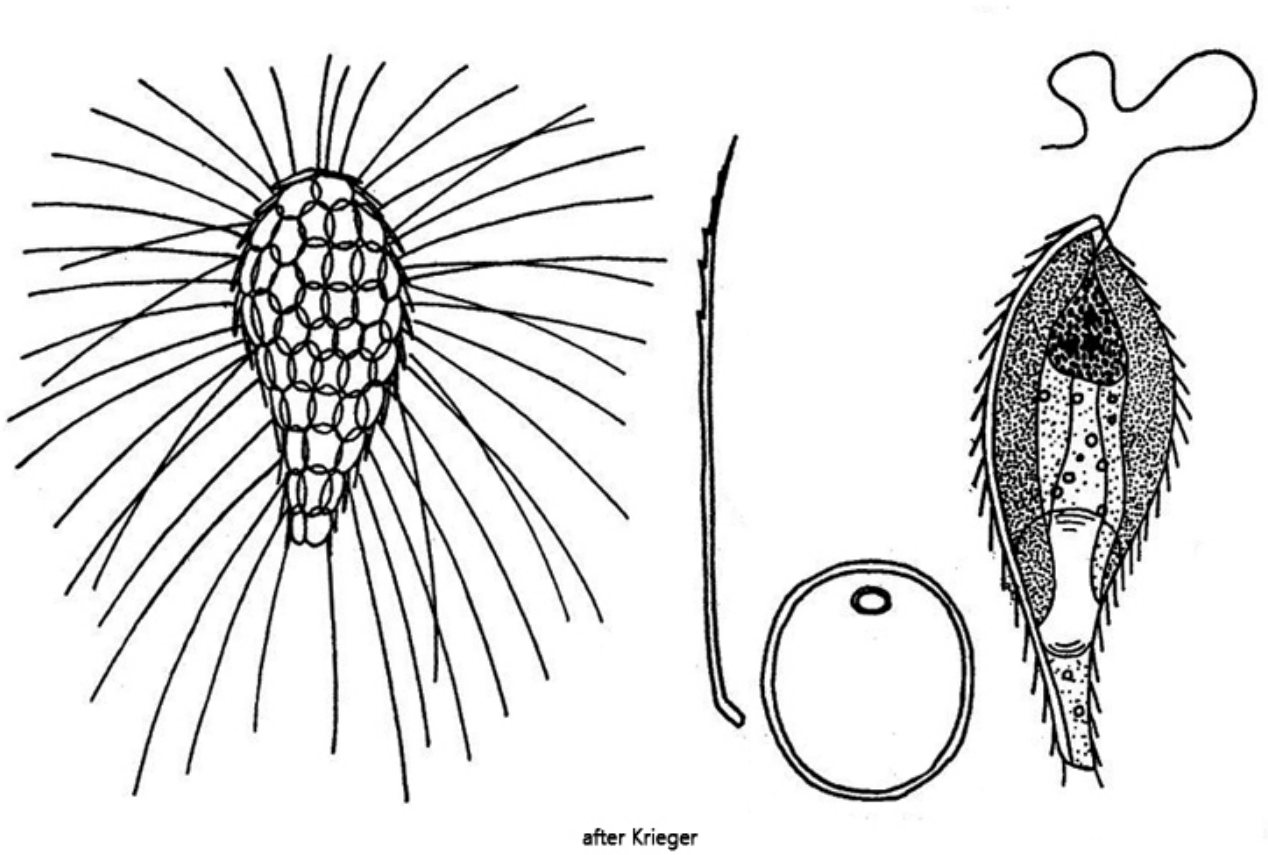
Synonym: n.a.

Sampling location: Pond of the waste disposal company Constance, Mühlhalden pond, Lake Constance

Phylogenetic tree: *Mallomonas caudata*

Diagnosis:

- cell ovoid, pear-shaped or club-shaped
- length 40–100 µm
- one flagellum of body length
- two brownish or greenish chloroplasts
- nucleus apical
- circular or elliptical scales, diameter 7–9 µm
- scales smooth, transparent, roof tile-like arranged
- spines slightly curved, 25–85 µm long
- base of spines L-shaped, distal end serrated



Mallomonas caudata

Mallomonas caudata is a very common species and I find it in plankton samples from many of my sampling sites. The species can be recognized by the rather long spines, which are serrated at the distal ends. In my population, the cells are mostly oval or pear-shaped. The nucleus is located apically, where the flagellum originates. It lies between the two chloroplasts and is often somewhat triangular in shape.

The most important feature for a clear identification are the silica scales. In *Mallomonas caudata* they are round, broadly oval or slightly elliptical with a diameter of 7–9 µm. The scales are arranged in an overlapping pattern and show no structure under the light microscope. In the literature (Starmach, 1985) it is mentioned that the scales can show a V-shaped thickening. However, I was never able to observe this in my population. Each scale bears a spine, which has an L-shaped base with which the spine is attached to the scale. The scales are slightly curved and the distal ends show a conspicuous serration.

More images and information on *Mallomonas caudata*: Michael Plewka-Freshwater life-*Mallomonas caudata*

Fig. 1 a-b: *Mallomonas caudata*. L = 40 µm (without spines). Two focal planes of a freely swimming specimen. F = flagellum, Nu = nucleus. Obj. 100 X

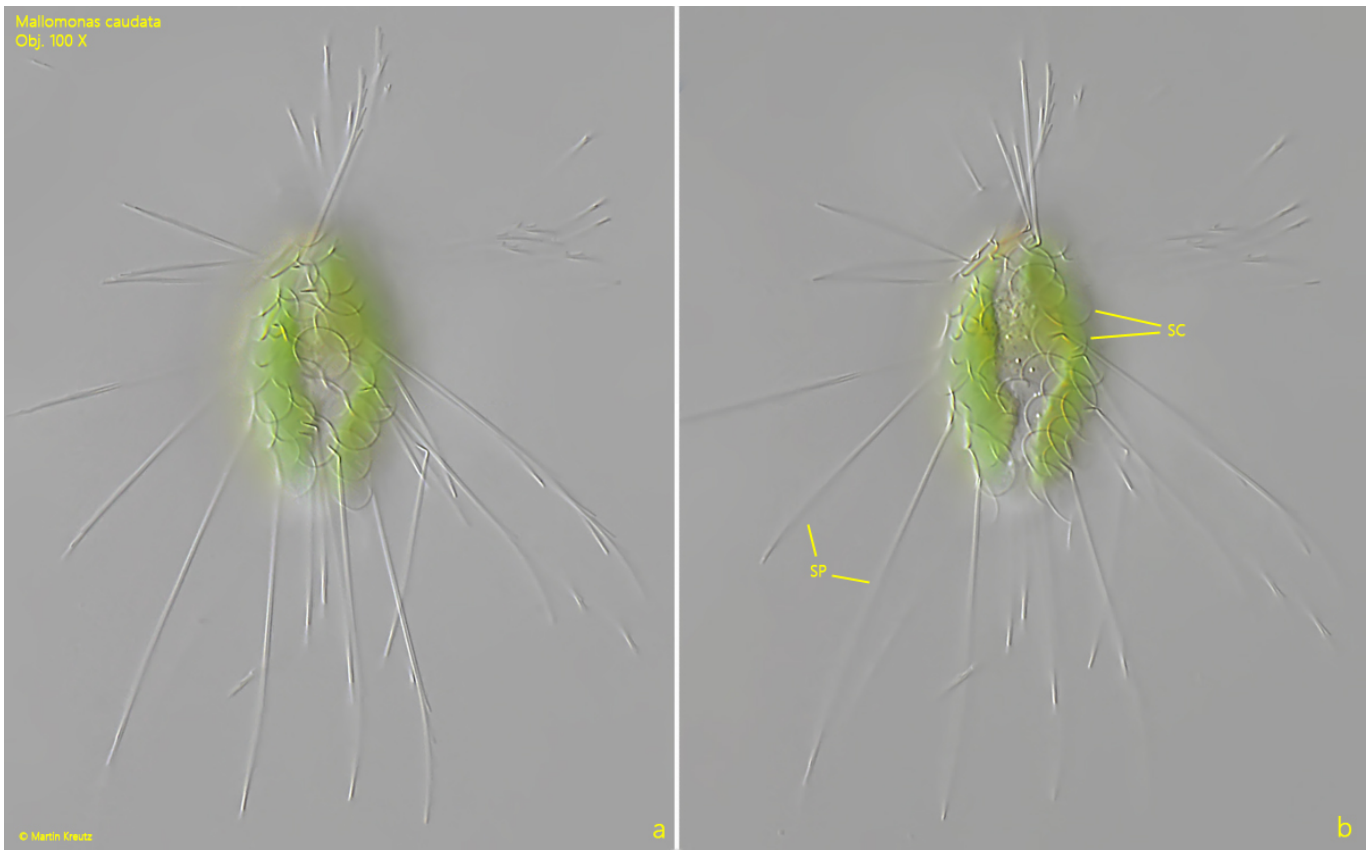


Fig. 2 a-b: *Mallomonas caudata*. L = 38 µm (without spines). Two focal planes on the layer of circular scales (SC). Each scale is bearing one spine (SP). Obj. 100 X

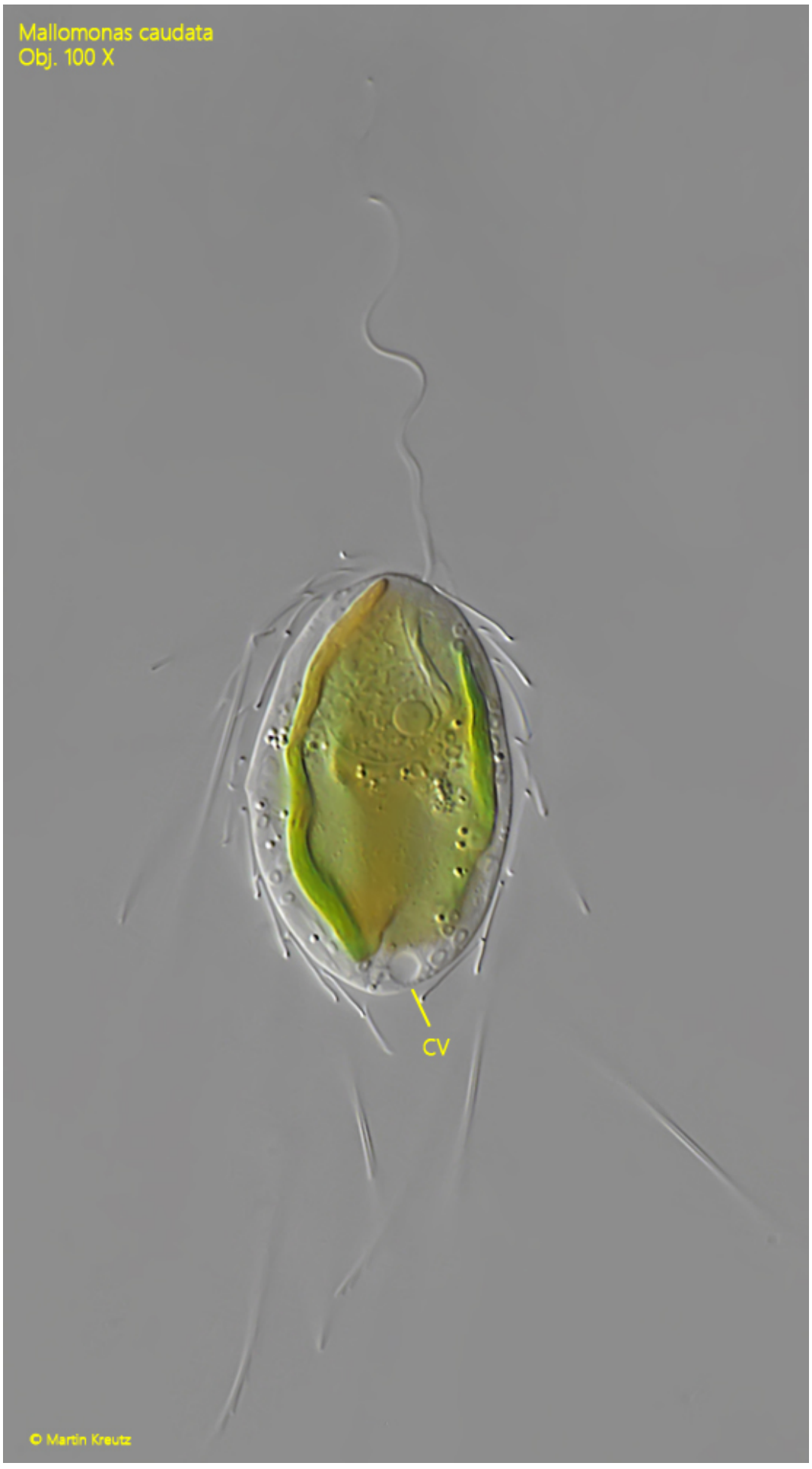

Mallomonas caudata
Obj. 100 X
CV
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Fig. 3: *Mallomonas caudata*. A squashed specimen with one of the terminal contractile vacuoles (CV). Obj. 100 X

Fig. 4: *Mallomonas caudata*. The protoplast was squeezed out of the sheath of scales by coverslip pressure. Note the serrated distal ends of the spines (arrow). Obj. 100 X

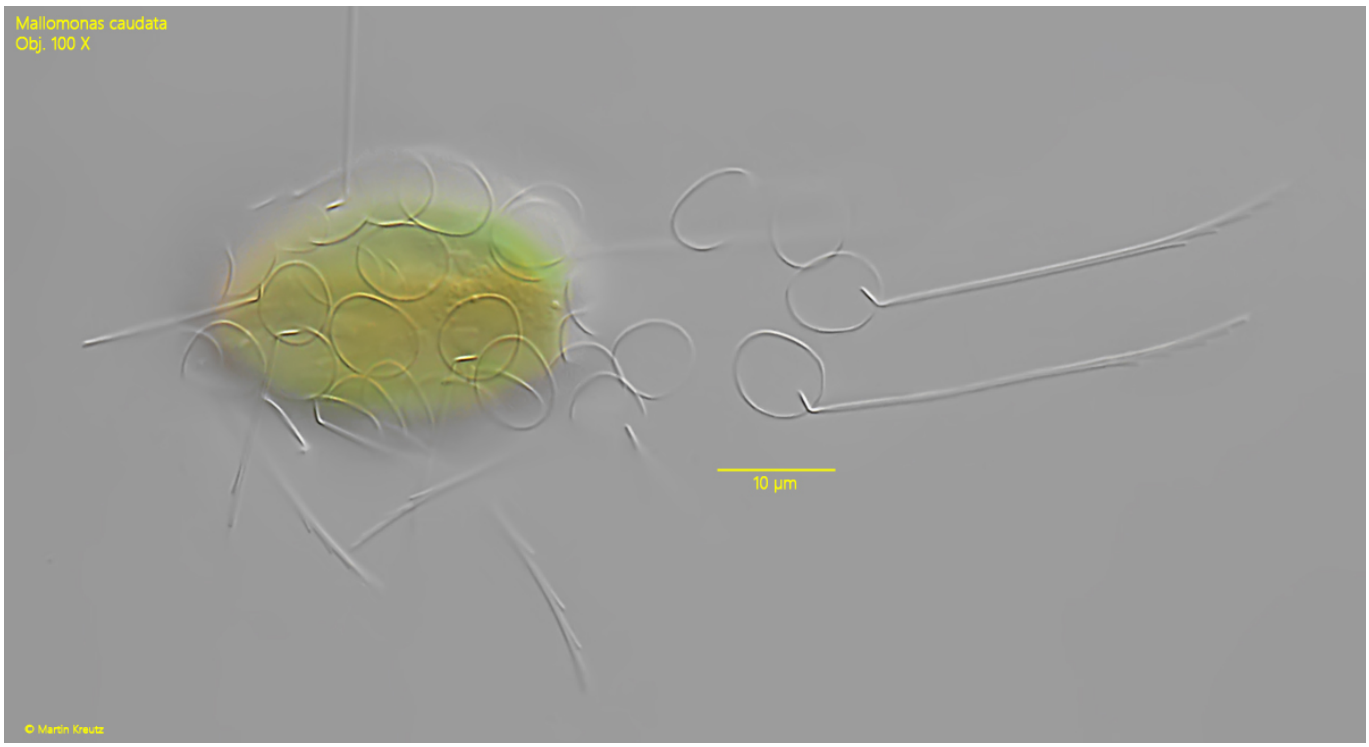

Fig. 5: *Mallomonas caudata*. The circular scales with a diameter of 7–8 µm in detail. They are smooth and transparent. Each scale is bearing a spine with a L-shaped base. The distal ends of the spines are serrated. Obj. 100 X