Paramecium aurelia Ehrenberg, 1838

Most likely ID: n.a.

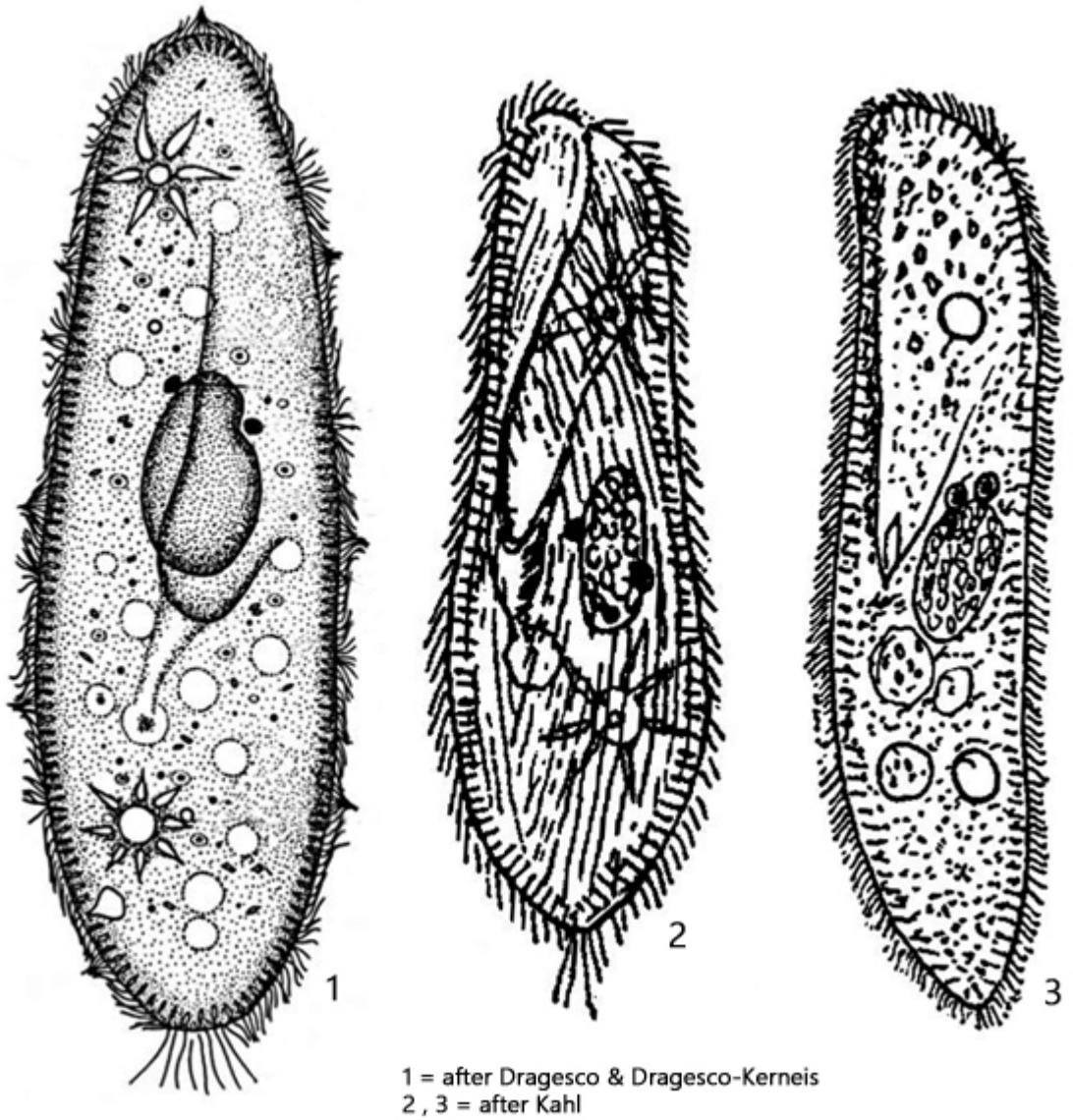
Synonym: n.a.

Sampling location: Pond of the waste disposal company Constance

Phylogenetic tree: *Paramecium aurelia*

Diagnosis:

- body slipper-shaped, anteriorly rounded, posteriorly conical or narrowly rounded
- length 100–180 µm, width 35–55 µm
- ventral surface with a distinct groove of the oral apparatus
- mouth opening below cell equator
- macronucleus ellipsoid in mid-body
- two spherical micronuclei in separate vacuoles
- two contractile vacuoles in anterior third and posterior third on dorsal side
- each contractile vacuole with one excretion porus
- contractile vacuoles with about 7–9 radial collecting ducts each
- spindle-shaped extrusomes 3–4 µm long, forming fringe beneath pellicle
- pellicle quadrangularly fielded
- ciliation uniform, 80–120 ciliary rows of paired cilia
- a tuft of caudal cilia



Paramecium aurelia

I found *Paramecium aurelia* in an old sample containing decomposing water lily leaves. This finding corresponds with Kahl's (1935) description that *Paramecium aurelia* often occurs in samples containing decaying plants.

Paramecium aurelia is slightly smaller than *Paramecium caudatum* and is a fast, restless swimmer. Its characteristics are essentially the same as those of *Paramecium caudatum*, which is why the species has certainly been overlooked frequently. The only reliable identifying feature is characterstic of the the nuclear apparatus. There are a large, ellipsoid macronucleus and two micronuclei, each are located in separate vacuoles. However, this can only be seen in squashed specimens (s. figs. 3 and 4).

The specimens in my population were on average 150 µm long. At 5.3–5.5 µm, the extrusomes were slightly longer than those described by Foissner, Berger & Kohmann (1994), who give a length of 3–4 µm (s. fig. 7). Otherwise, all other characteristics were consistent.

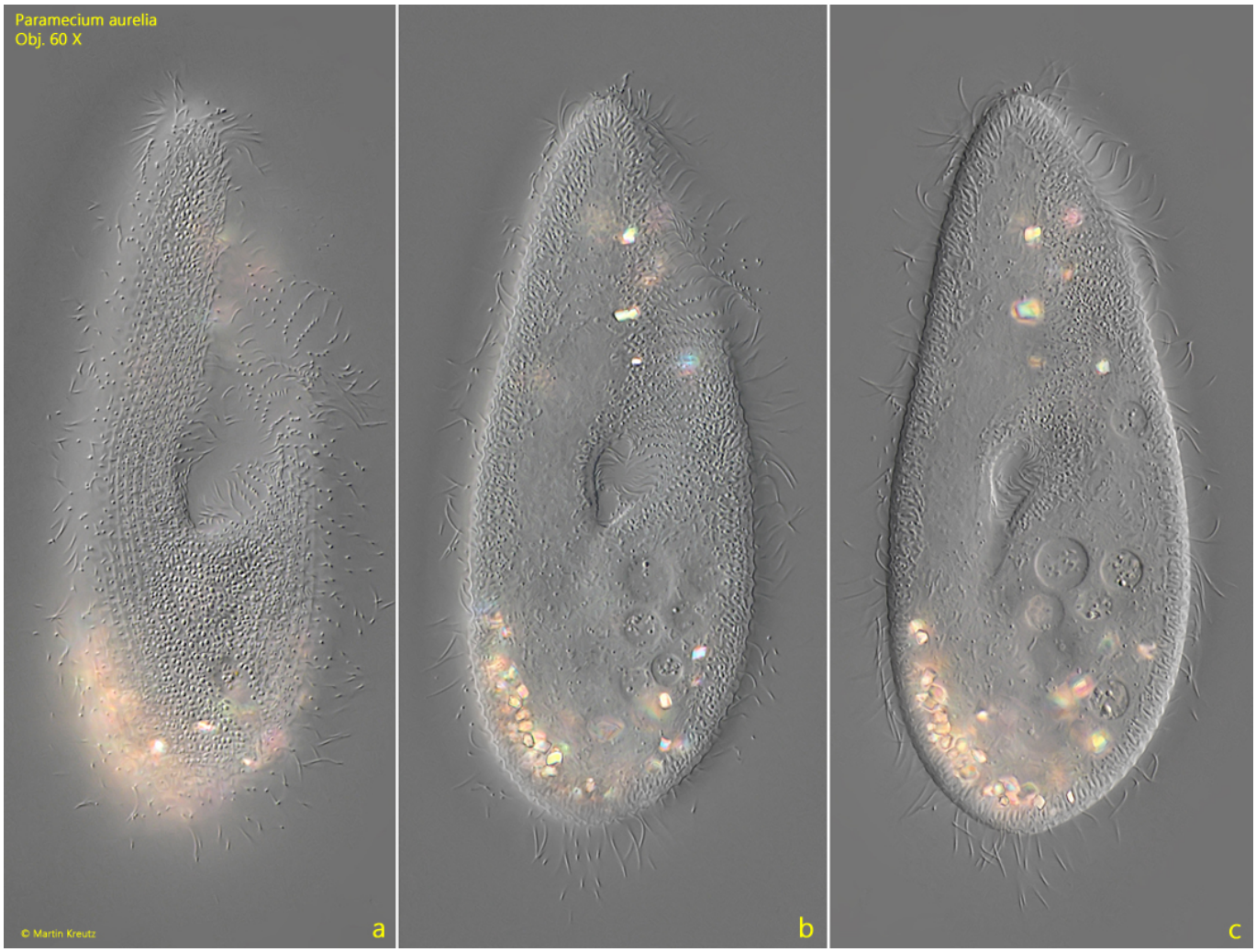


Fig. 1 a-c: *Paramecium aurelia*. L = 155 µm. Three focal planes of a freely swimming specimen from ventral. Obj. 60 X.

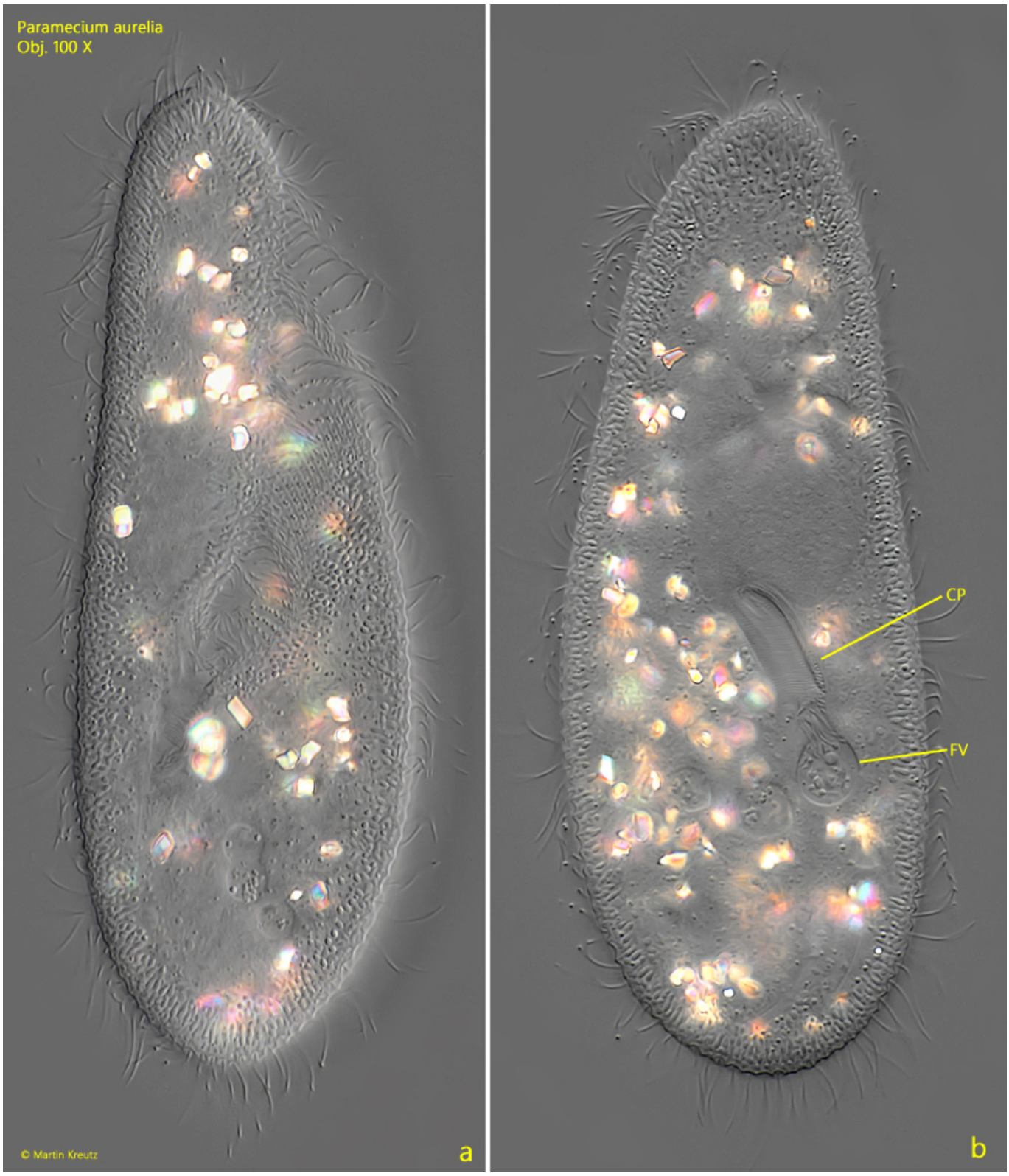


Fig. 2 a-b: *Paramecium aurelia*. L = 156 µm. A second freely swimming specimen from ventral (a) and from dorsal (b). The cytopharynx (CP) fills a food vacuole (FV) with collected bacteria. Obj. 100 X.

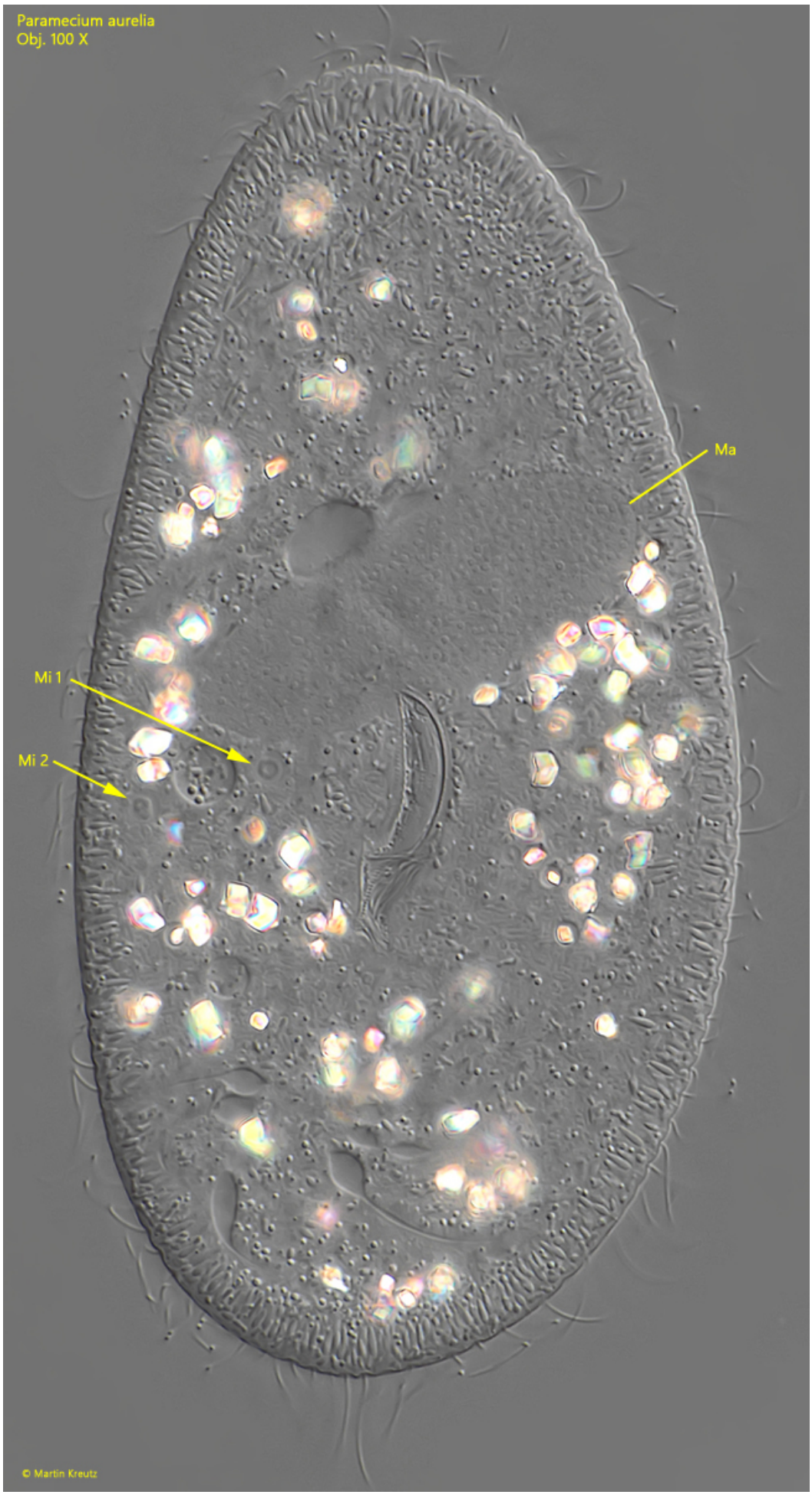

Paramecium aurelia
Obj. 100 X
Ma
Mi 1
Mi 2
© Martin Kreutz

Fig. 3: *Paramecium aurelia*. The ellipsoid macronucleus (Ma) and the two micronuclei (Mi 1, Mi 2) in a second squashed specimen. Obj. 100 X.

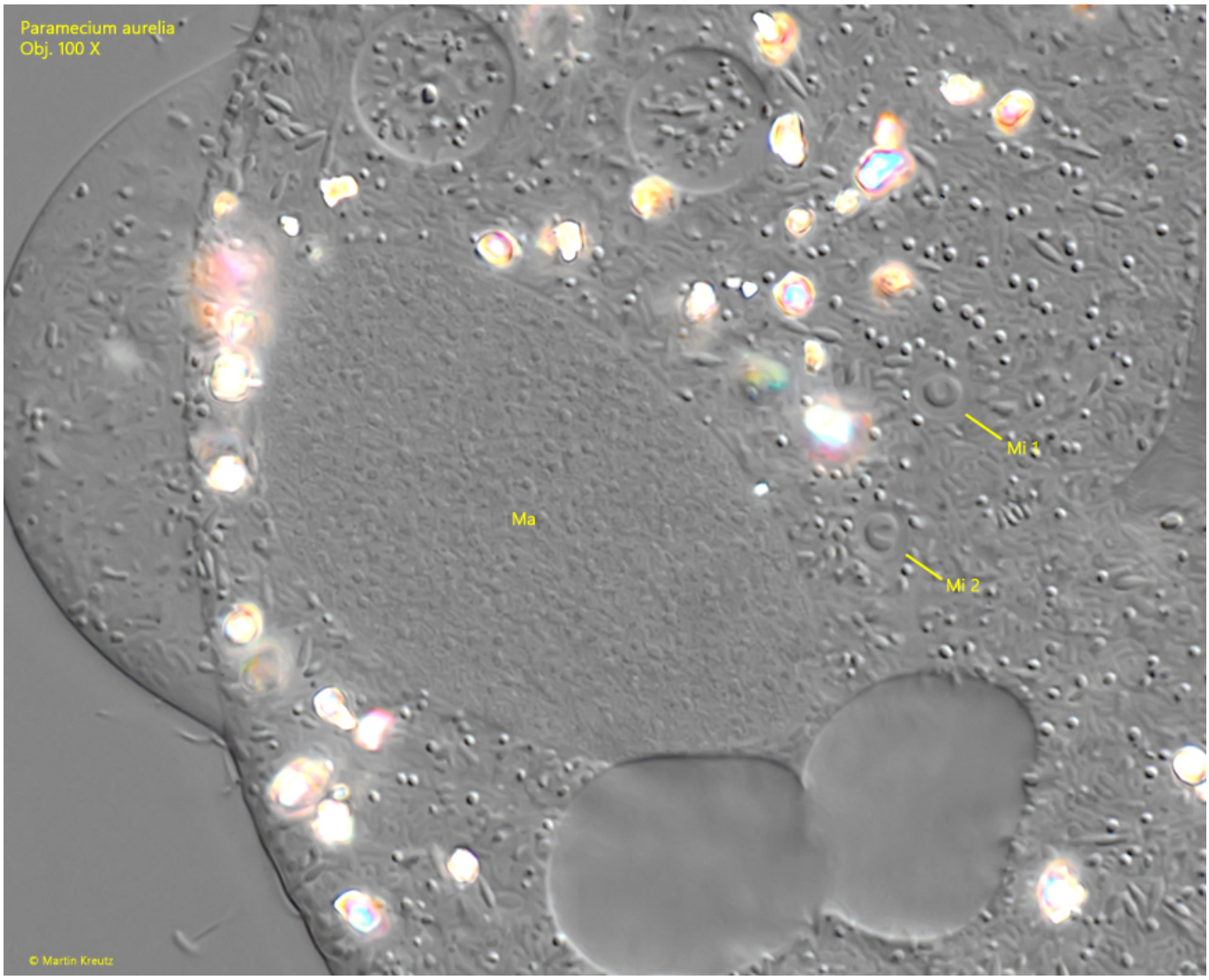


Fig. 4: *Paramecium aurelia*. The ellipsoid macronucleus (Ma) and the two micronuclei (Mi 1, Mi 2) in a squashed specimen. The miconuclei are enclosed in separate vacuoles. Obj. 100 X.

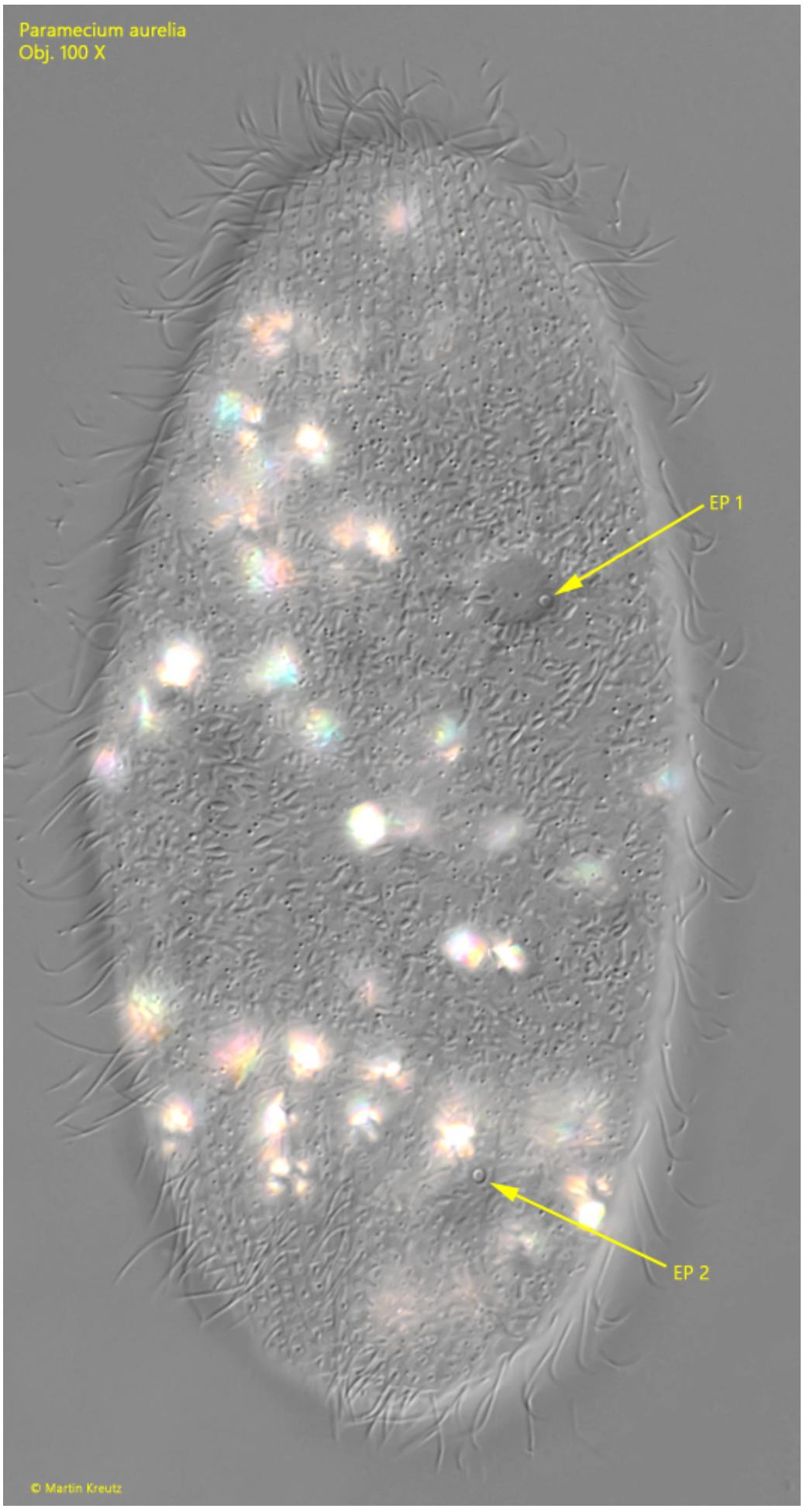

Paramecium aurelia
Obj. 100 X
EP 1
EP 2
© Martin Kreutz

Fig. 5: *Paramecium aurelia*. The two excretion pores (EP 1, EP 2) of the two contractile vacuoles are located dorsally. Obj. 100 X.

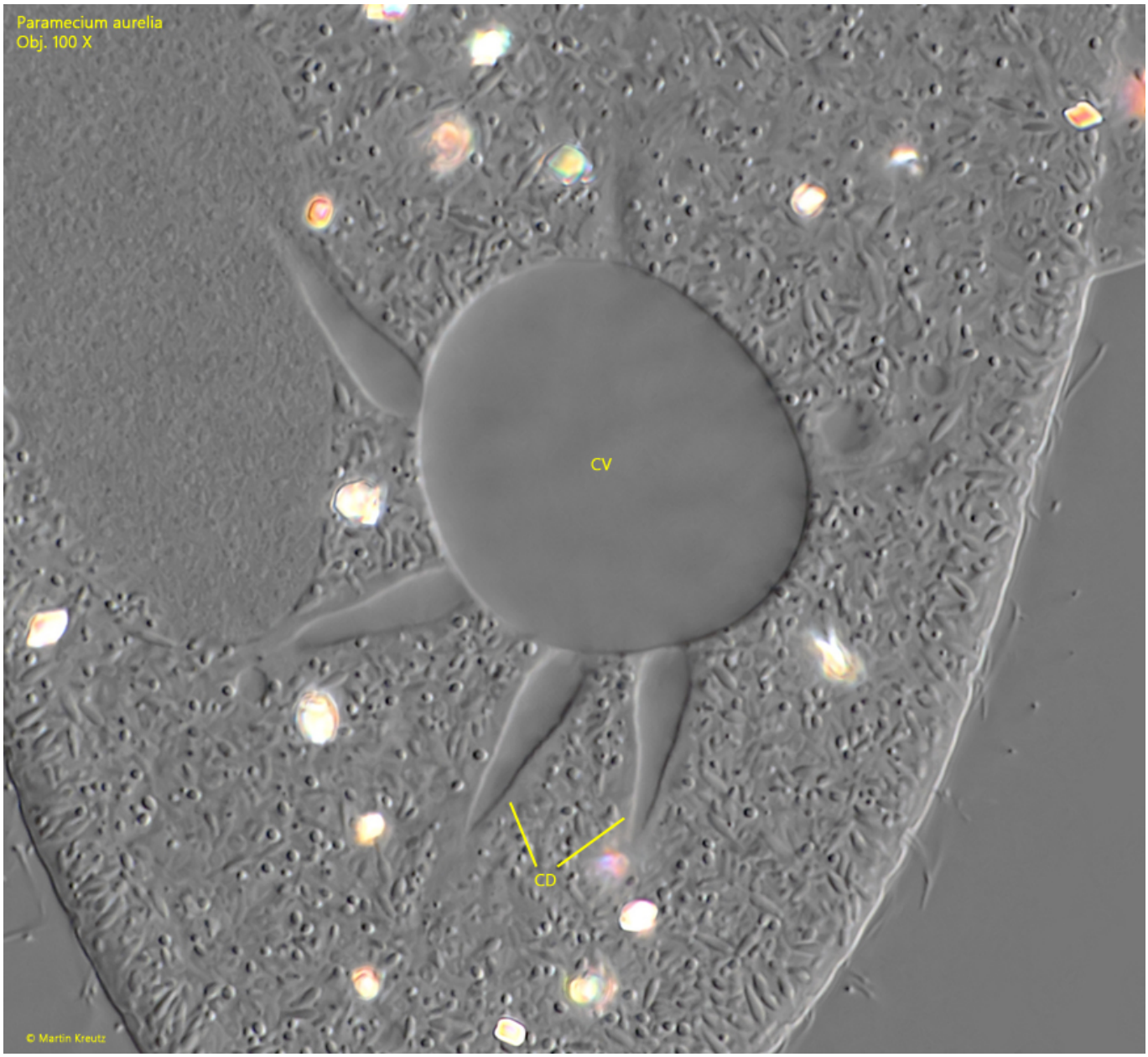


Fig. 6: *Paramecium aurelia*. The posterior contractile vacuole (CV) in a squashed specimen with several collection ducts (CD). Obj. 100 X.

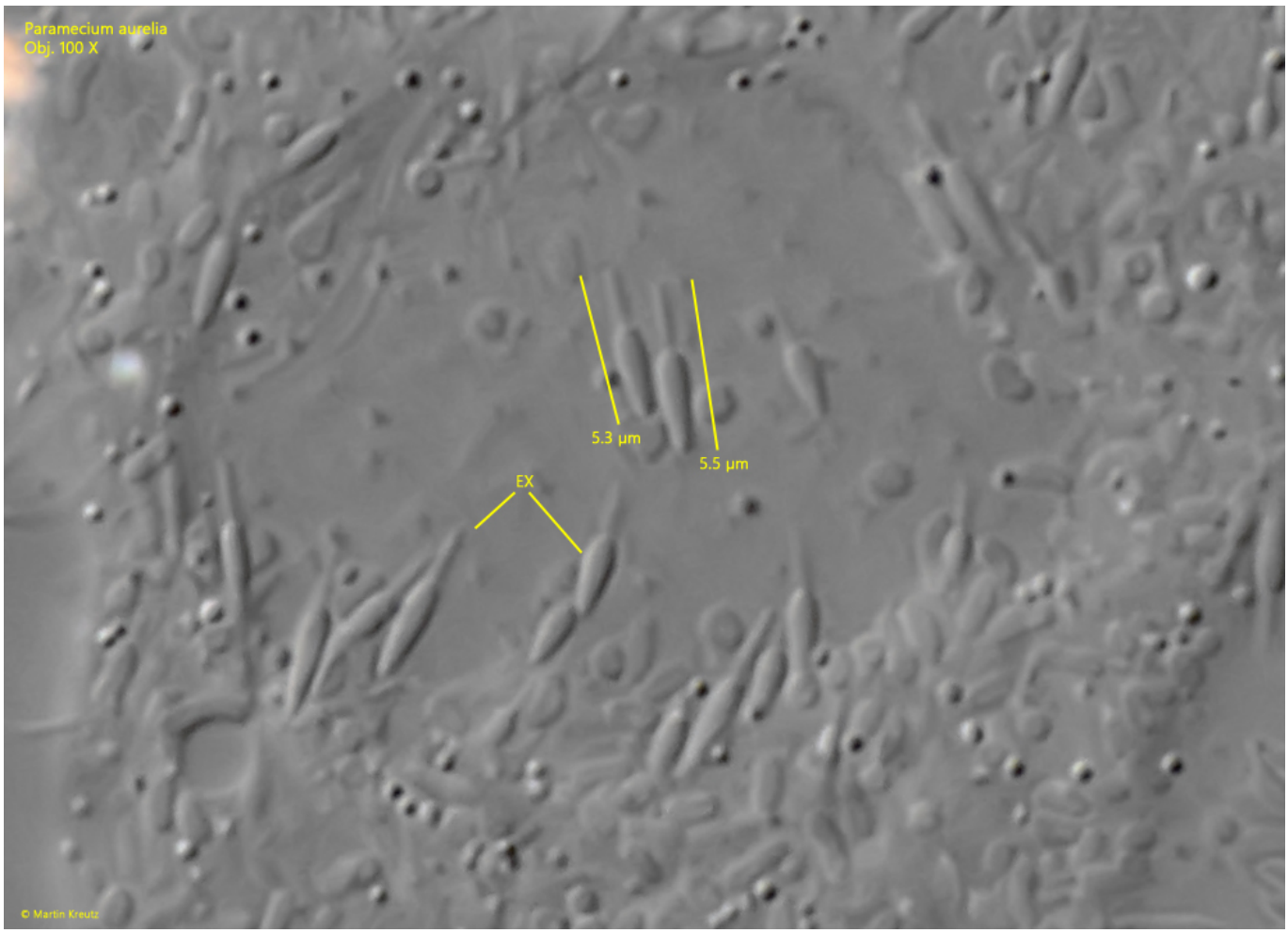


Fig. 7: *Paramecium aurelia*. The extrusomes (EX) in a squashed specimen are 5.3–5.5 µm long. Obj. 100 X.

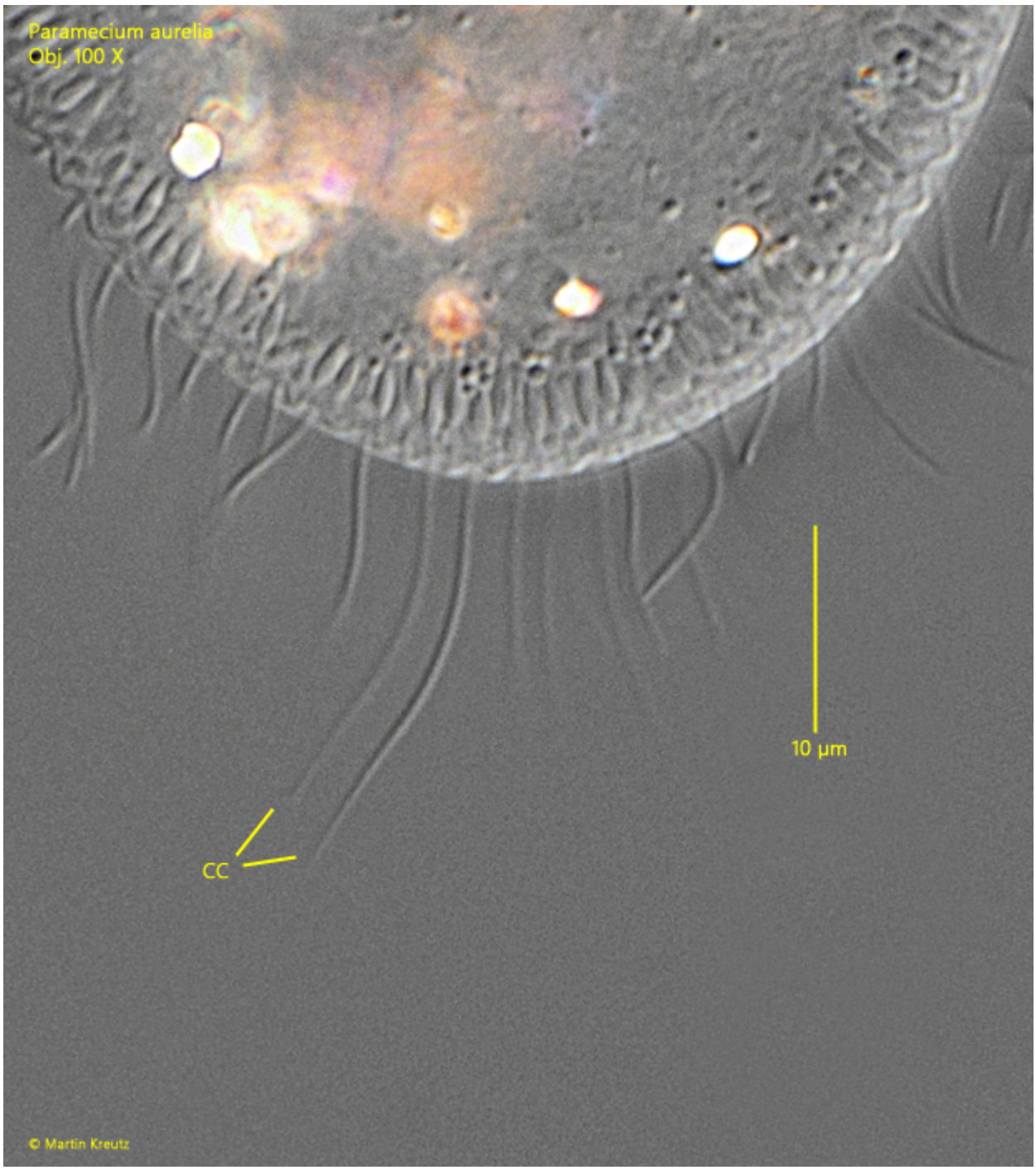


Fig. 8: *Paramecium aurelia*. The caudal cilia with a length of 15–17 µm. Obj. 100 X.

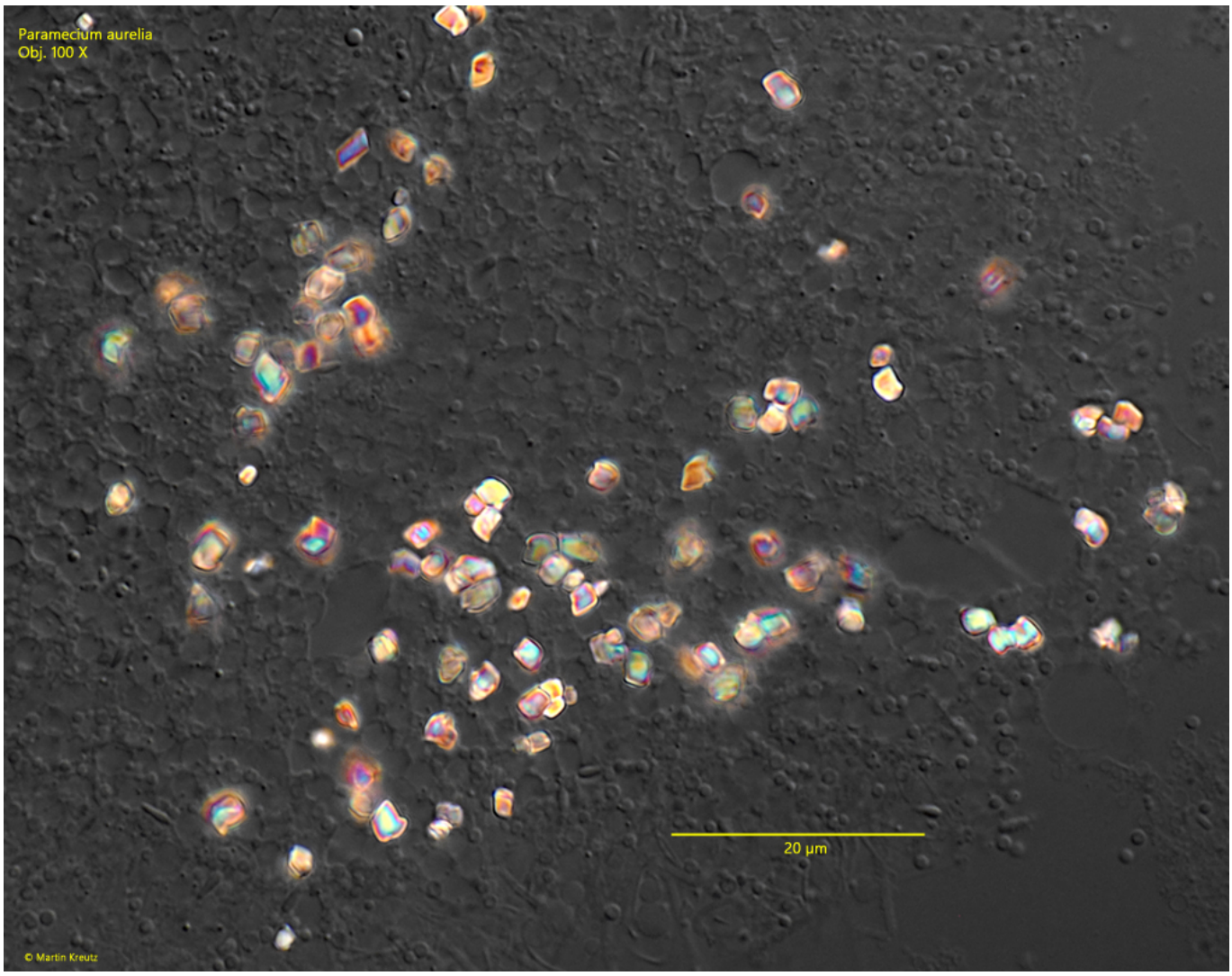


Fig. 9: *Paramecium aurelia*. The crystals scattered in the cytoplasm have a diameter of about 2–4 µm and a more or less rectangular shape. Obj. 100 X.