Frontonia acuminata

(Ehrenberg, 1834) Bütschli, 1889

Most likely ID: n.a.

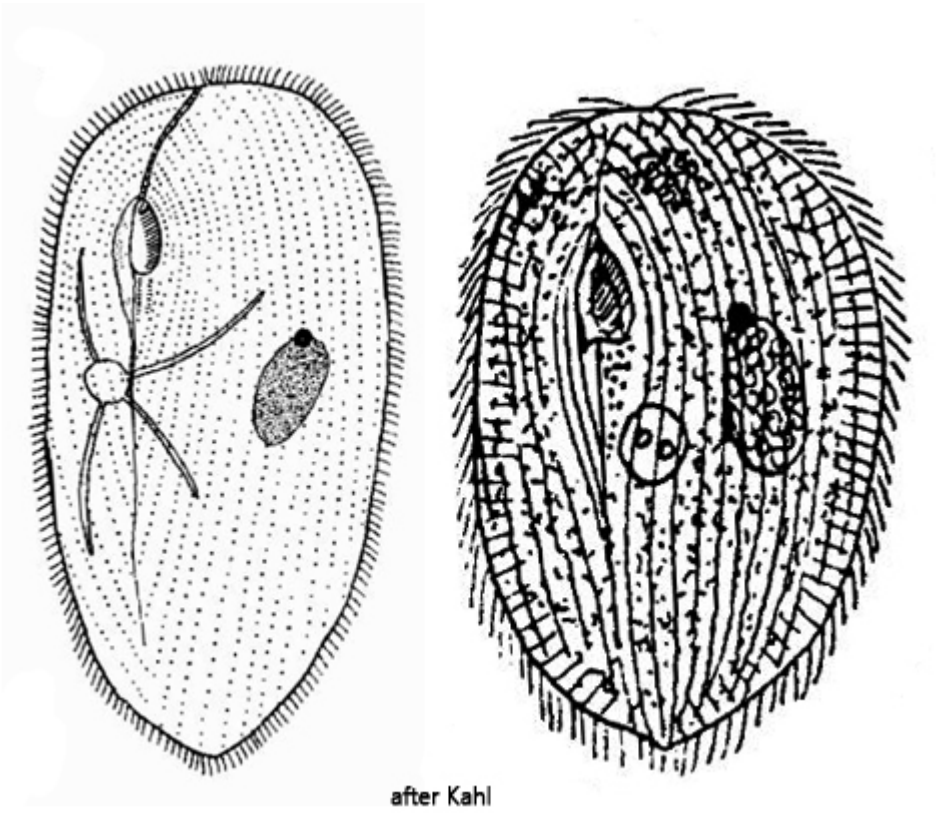
Synonym: n.a.

Sampling location: Simmelried, Sima Moor

Phylogenetic tree: *Frontonia acuminata*

Diagnosis:

- body shield-shaped, dorso-ventrally flattened, in cross section elliptical
- dark pigment spot at anterior end
- length 60–170 µm, width 35–120 µm
- one contractile vacuole in mid-body on right side
- contractile vacuole with 2 excretion pores (rarely 3)
- macronucleus ellipsoid or globular with globular micronucleus
  fringe of spindle-shaped extrusomes, about 6–10 µm long
- 55–60 longitudinal rows of cilia
- pellicle quadrangular fielded



Frontonia acuminata

I only rarely find *Frontonia acuminata*. The species is very similar to the much more common species *Frontonia angusta*, but *Frontonia acuminata* has a characteristic dark pigment spot located near the anterior end and the shape is slightly asymmetrical (shield-shaped, s. figs. 1 a-c and 2). The pigment spot is localized on the dorsal side and consists of greyish-black grains with a diameter of 1–2 µm (s. fig. 10). The grains are not crystalline and are not bacteria. Their nature is still unknown.

The contractile vacuole is located approximately in the middle of the body on the right side (s. fig. 1 b). It has two (rarely 3) excretory pores on the dorsal side (s. fig. 7). Under the pellicle there is a fringe of dense, spindle-shaped extrusomes. In my population they were between 7–9 µm long (s. fig. 9). The mouth opening is located in the anterior third on the left side. It corresponds to the *Frontonia* type. The pre-oral and post-oral sutures are clearly visible in the slightly squashed specimens (s. fig. 5). Below the mouth opening there is also a triangular field of framed cilia with unknown function (s. figs. 5 and 6).



Fig. 1 a-c: *Frontonia acuminata*. L = 156 µm. A freely swimming specimen from dorsal. Note the dark pigment spot (DS) near the anterior end. CV = contractile vacuole, Ma = macronucleus. Obj. 40 X.



Fig. 2: *Frontonia acuminata*. L = 114 µm. A second freely swimming specimen from dorsal. Obj. 40 X.



Fig. 3: *Frontonia acuminata*. L = 130 µm. A third freely swimming specimen from ventral. Obj. 40 X.

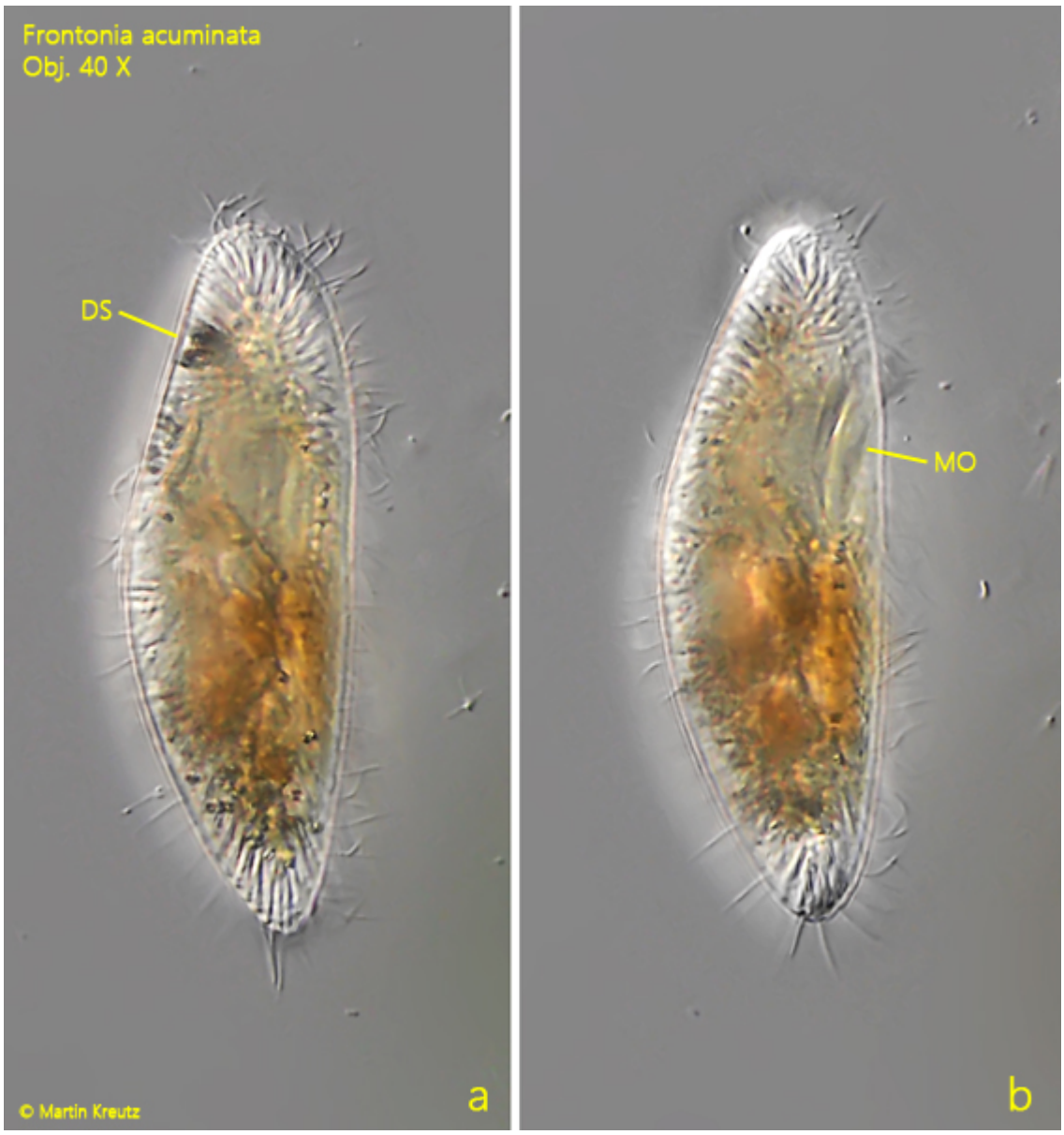


Fig. 4 a-b: *Frontonia acuminata*. L = 91 µm. Two focal planes of a specimen in lateral view from right. Note the dorsally located dark pigment spot (DS) and the mouth opening (MO). Obj. 40 X.

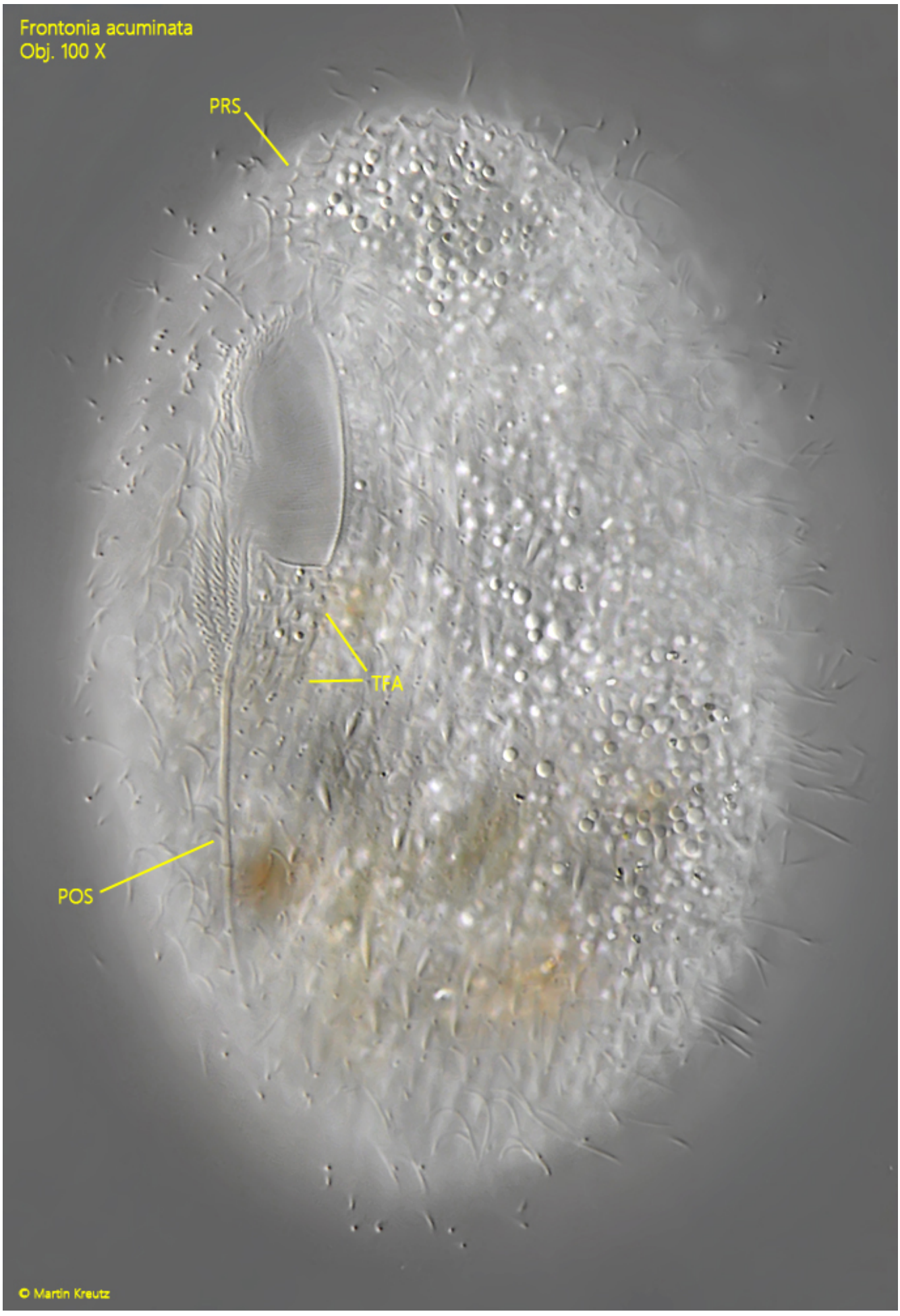

Frontonia acuminata
Obj. 100 X
PRS
TFA
POS
© Martin Kreutz

Fig. 5: *Frontonia acuminata*. L = 111 µm. A slightly squashes specimen from ventral. Note the pre-oral suture (PRS) and the post-oral suture (POS). Below the mouth opening the triangular field of framed cilia (TFA) is located. Obj. 100 X.

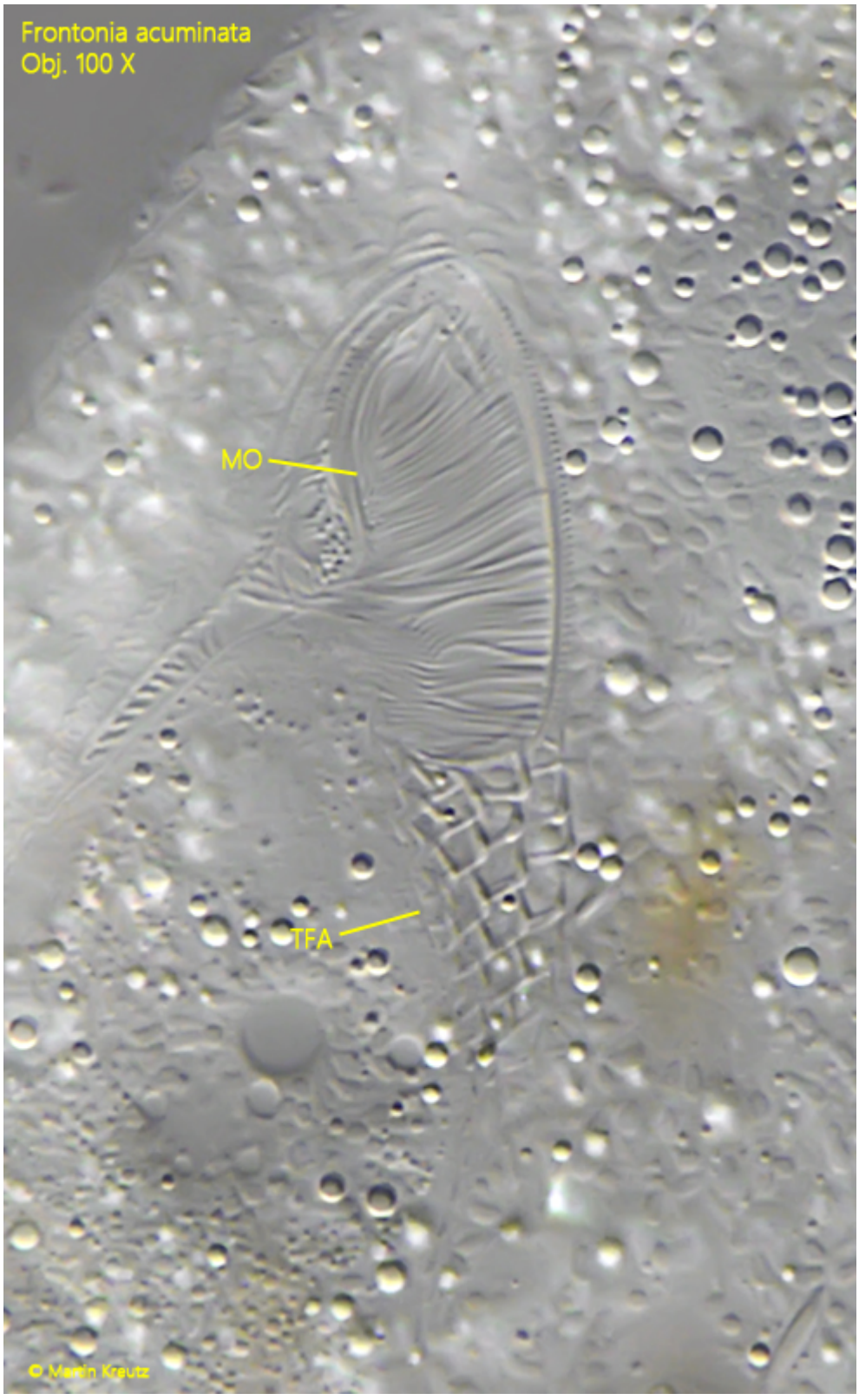


Fig. 6: *Frontonia acuminata*. L = 156 µm. The triangular field of framed cilia (TFA) in detail. Obj. 100 X.

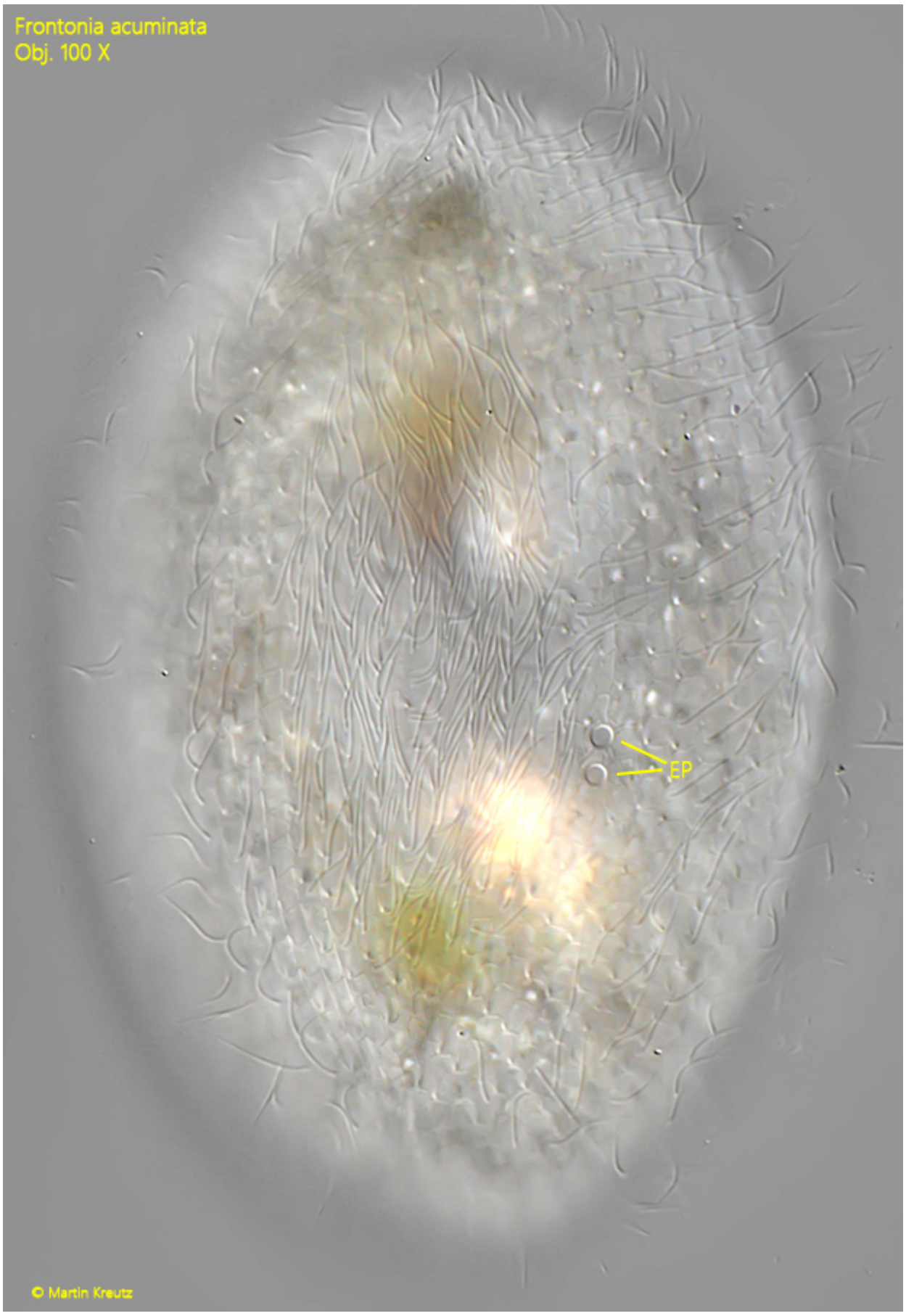


Fig. 7: *Frontonia acuminata*. L = 156 µm. The two excretion pores (EP) of the contractile vacuole on the dorsal side of the body. Obj. 100 X.

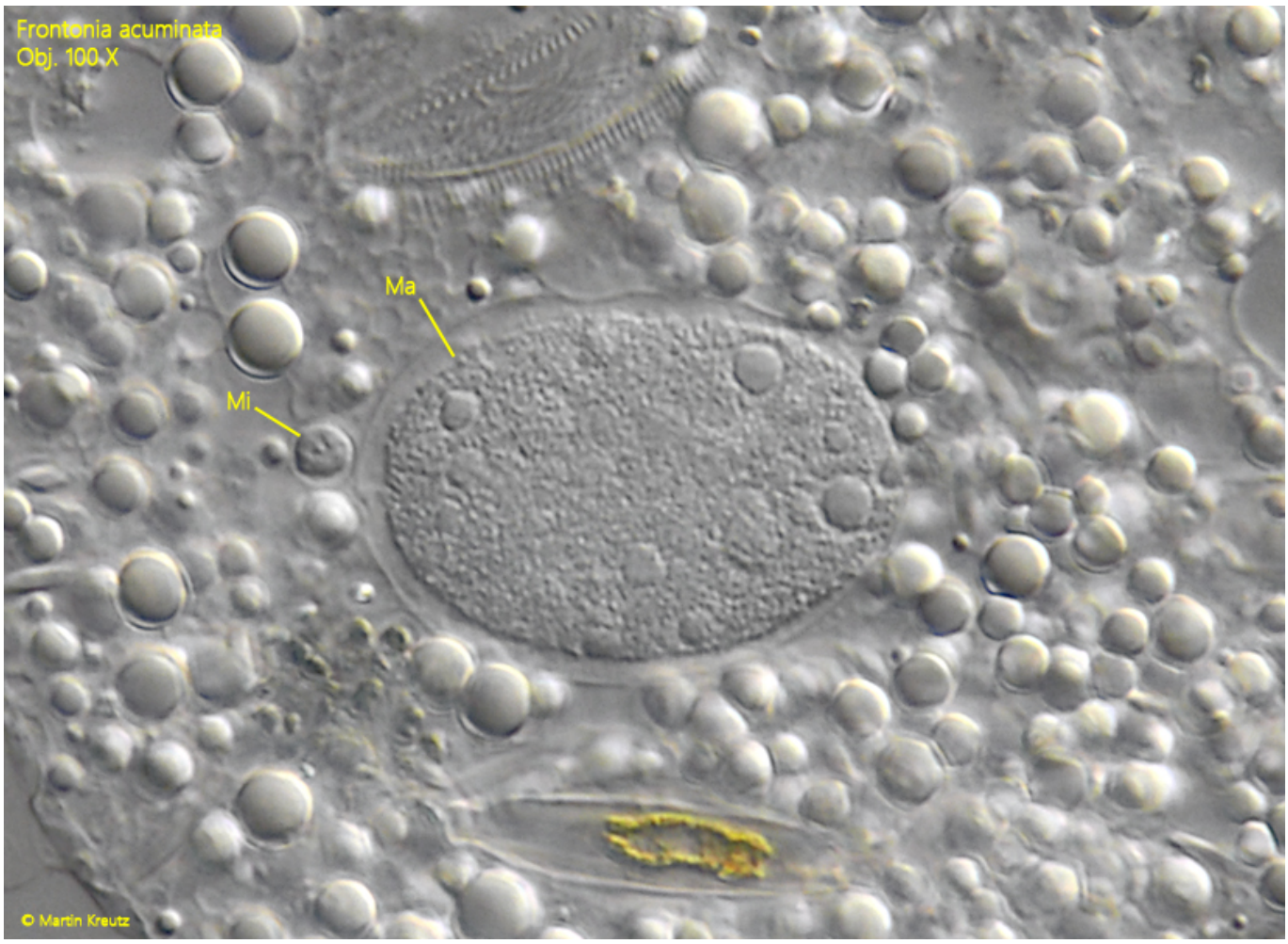


Fig. 8: *Frontonia acuminata*. The ellipsoid macronucleus (Ma) with the adjacent micronucleus (Mi). Obj. 100 X.

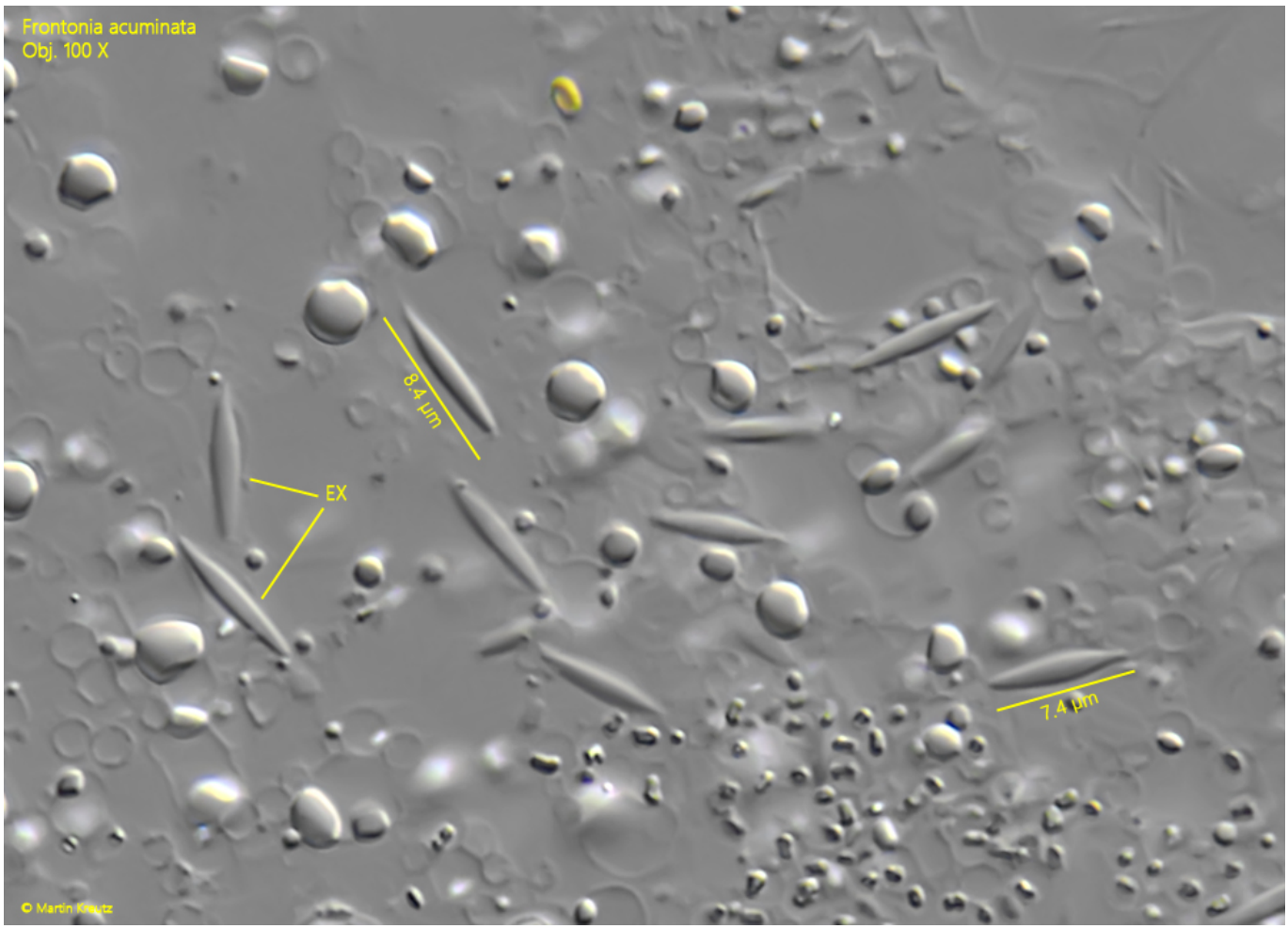


Fig. 9: *Frontonia acuminata*. The spindle-shaped extrusomes (EX) in a strongly squashed specimen. Obj. 100 X.

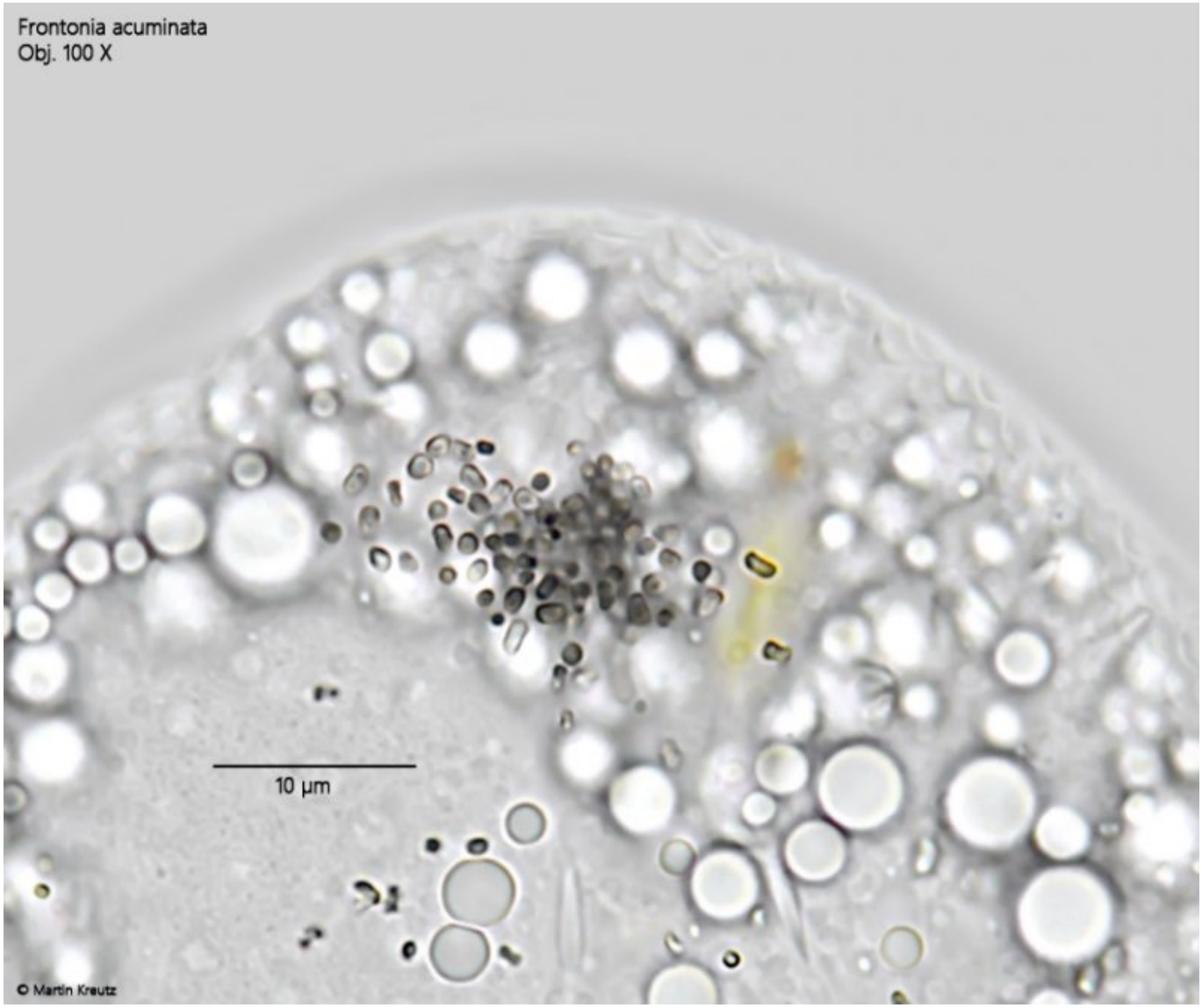


Fig. 10: *Frontonia acuminata*. The dark pigment spot near the anterior end in detail. It consists of 1–2 µm long, non-crystalline granules with a greyish-black color. Obj. 100 X.