Spirostomum minus Roux, 1901

Most likely ID: n.a.

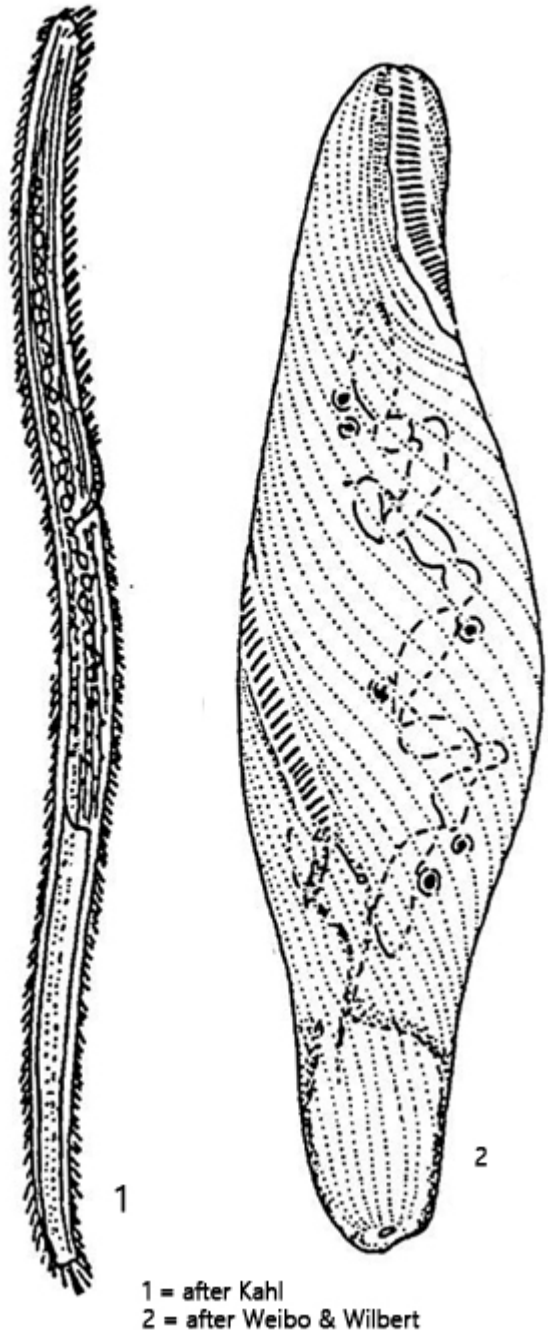
Synonym: n.a.

Sampling location: Ulmisried, Purren pond, Mainau pond, Simmelried

Phylogenetic tree: *Spirostomum minus*

Diagnosis:

- body elongate, worm-like
- body highly contractile
- length 300–800 µm
- contractile vacuole terminal with a dorsal collecting canal
- macronucleus moniliform, 15-20 ellipsoidal nodules
- several small micronuclei adjcent to macronucleus
- 20–30 longitudinal rows of cilia
- rows of colorless cortical granules between rows of cilia
- oral groove about 35–50 % of body length
- adoral zone on left side of oral groove



Spirostomum minus

Of the species of the genus *Spirostomum*, I find *Spirostomum minus* most commonly. The specimens are mainly found in the uppermost mud layer, especially where fallen leaves are introduced.

The specimens are easy to recognize even in detritus-rich samples due to their size of about 1 mm. To distinguish them from the similar species *Spirostomum teres*, however, it is important to examine the macronucleus. In *Spirostomum minus* it is moniliform, whereas in *Spirostomum teres* it is ellipsoid. The specimens in my population are often over 1 mm long and mostly slender. However, there are also

broader, stockier specimens.

Spirostomum minus can contract extremely quickly when disturbed or in contact with predators. The contracted specimens have a typical shape (s. fig. 1 b), with a roughly pointed anterior part and a tapered but almost parallel-sided posterior part where the contractile vacuole is located.

The adoral zone of the genus *Spirostomum* is strongly elongated and is located on the left side of a shallow groove that leads to the mouth opening. *In Spirostomum minus*, the adoral zone can account for up to 50 % of the body length. In my population it was about 40 %.

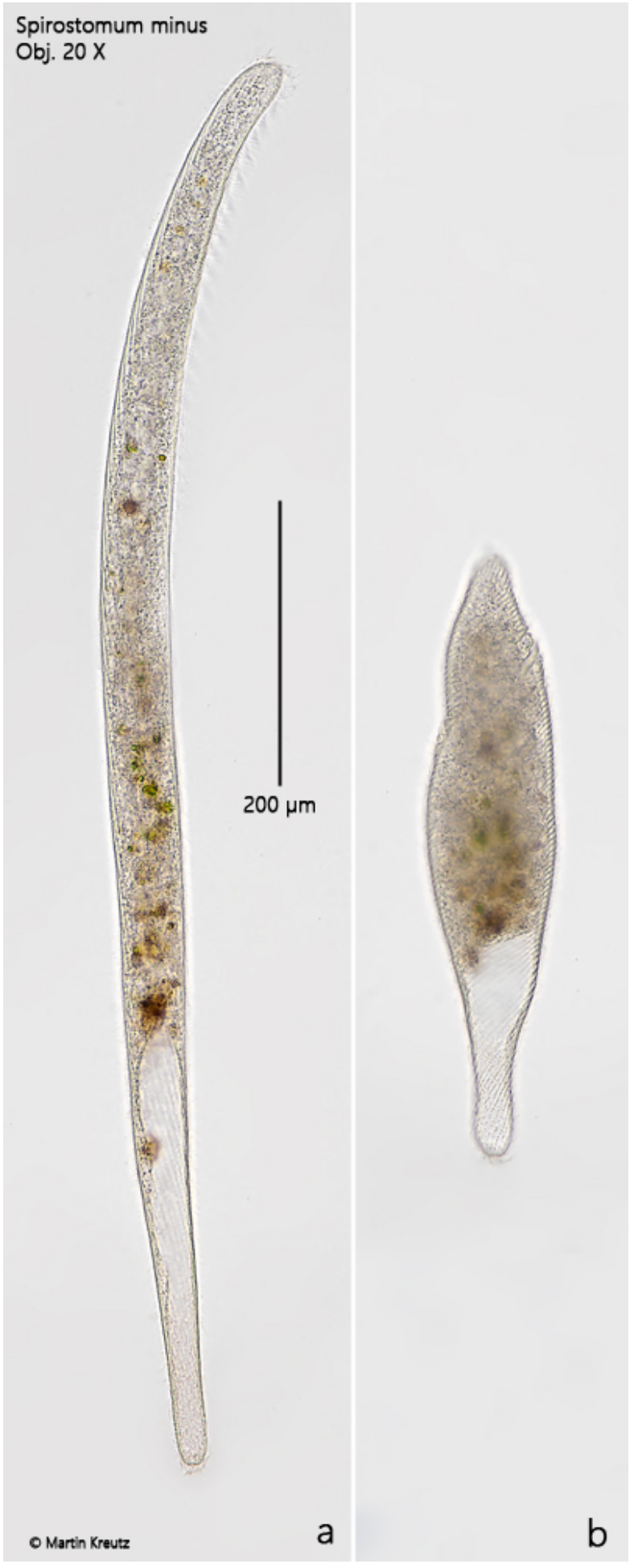
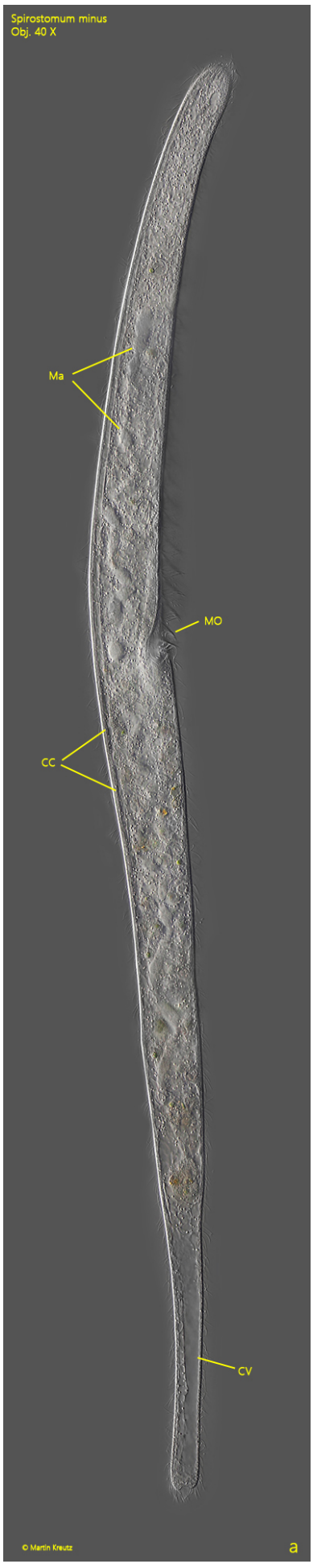

Spirostomum minus
Obj. 20 X
200 µm
© Martin Kreutz
a
b

Fig. 1 a-b: *Spirostomum minus*. L = 1028 µm (of elongated specimen). An elongated (a) and retracted (b) specimen in brightfield illumination. The retracted specimen has a length of 434 µm. Obj. 20 X.

Fig. 2 a-b: *Spirostomum minus*. L = 822 µm. A freely swimming specimen. Obj. 20 X.


Spirostomum minus
Obj. 40 X
Ma
MO
CC
CV
© Martin Kreutz
a

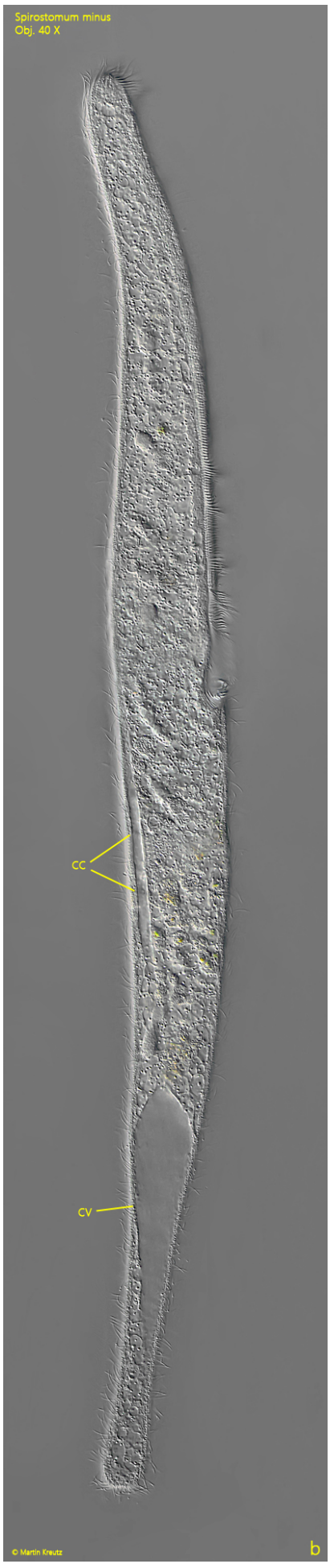

Spirostomum minus
Obj. 40 X
cc
cv
© Martin Kreutz
b

Fig. 3 a-b: *Spirostomum minus*. L =920 µm (a) and 863 µm (b). Two freely swimming specimens in detail. Note the dorsal collecting canal (CC) reaching from the contractile vacuole (CV) to the anterior end. Ma = macronucleus, MO = mouth opening. Obj. 40 X.

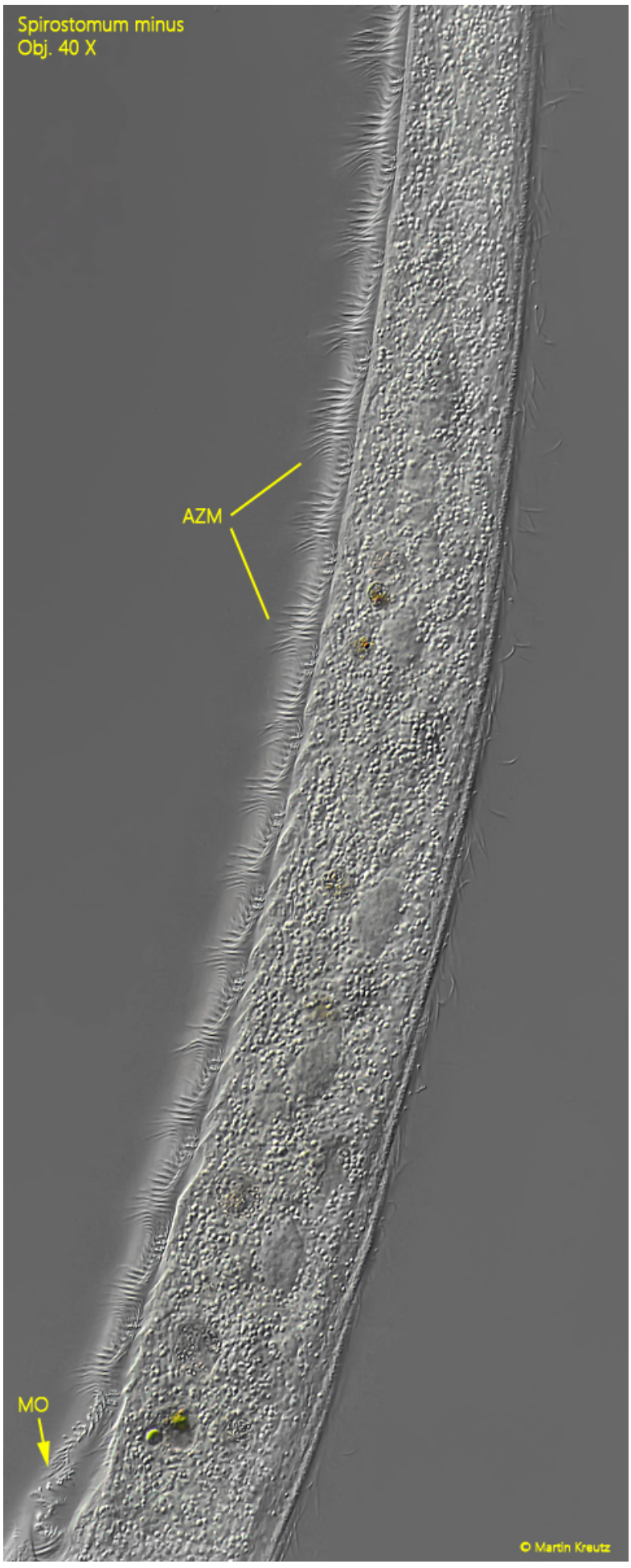

Spirostomum minus
Obj. 40 X
AZM
MO
© Martin Kreutz

Fig. 4: *Spirostomum minus*. A part of the adoral zone of membranelles (AZM) in undulating movement. Mo = mouth opening. Obj. 40 X.

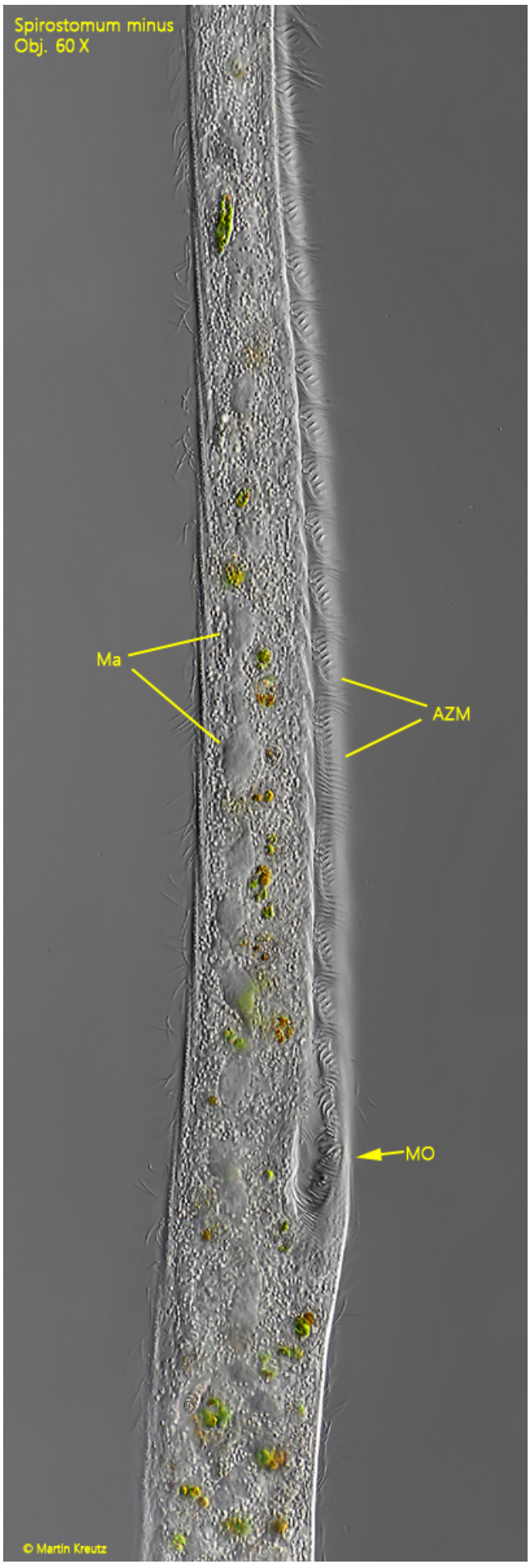

Spirostomum minus
Obj. 60 X
Ma
AZM
MO
© Martin Kreutz

Fig. 5: *Spirostomum minus*. The adoral zone of membranelles (AZM) of a second specimen is leading to the mouth opening (MO). Obj. 40 X.

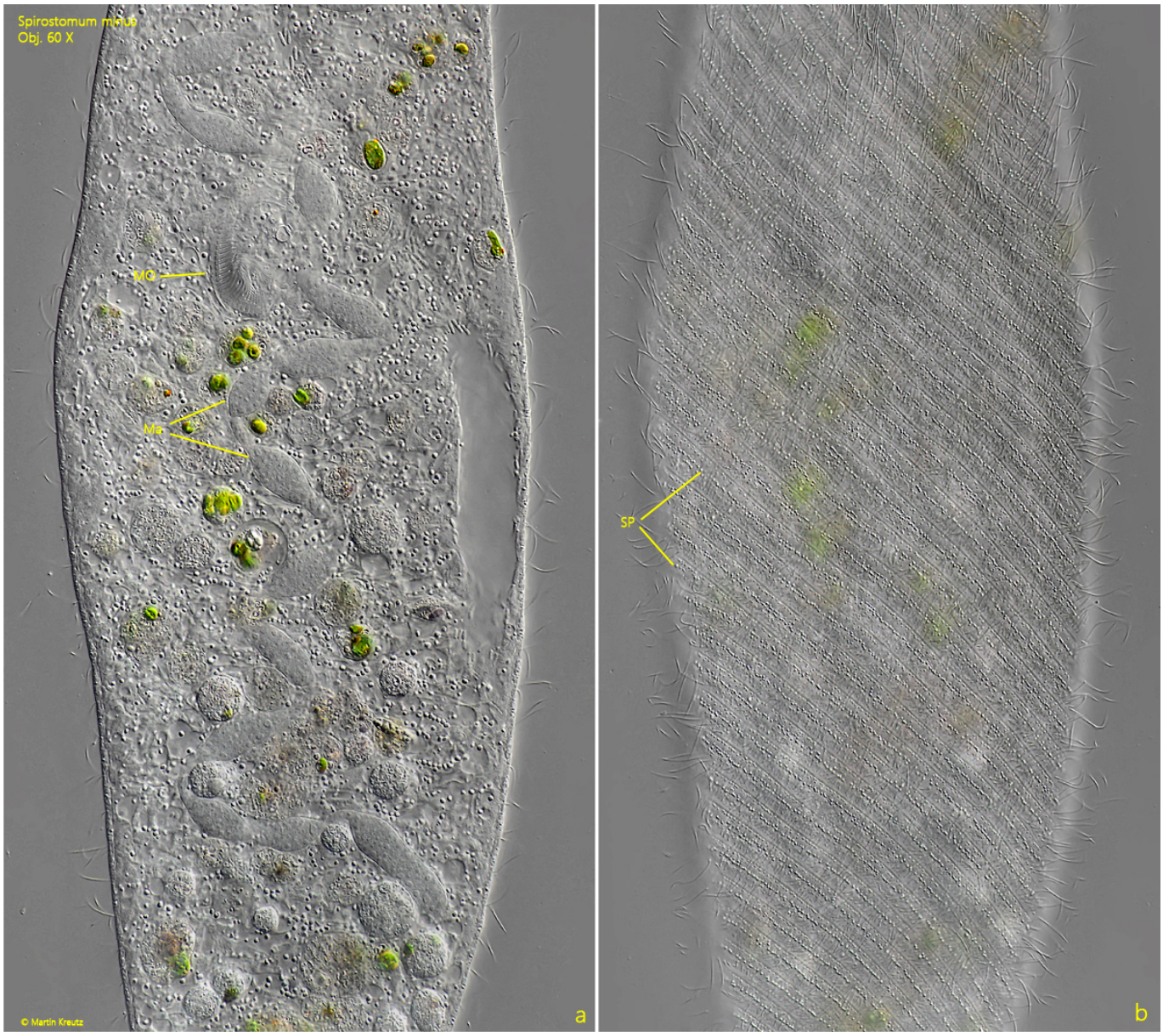


Fig. 6 a-b: *Spirostomum minus*. The nodules of the moniliform macronucleus (Ma) and the striation the pellicle (SP) caused by rows of colorless granules. MO = mouth opening. Obj. 60 X.

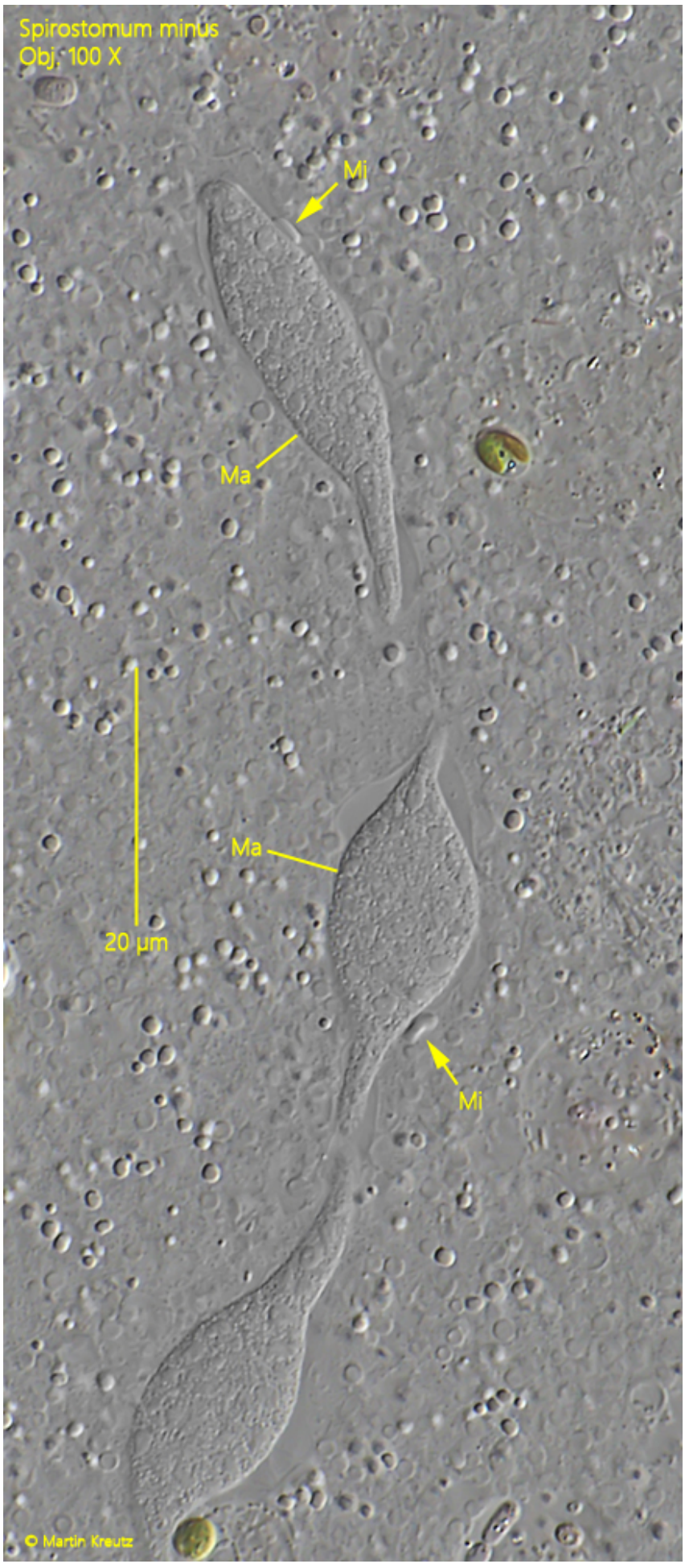

Spirostomum minus
Obj. 100 X
Mi
Ma
Ma
20 µm
Mi
© Martin Kreutz

Fig. 7: *Spirostomum minus*. Three nodules of the moniliform macronucleus (Ma) in a squashed specimen. Note the small micronucle attached to the nodules. Obj. 100 X.

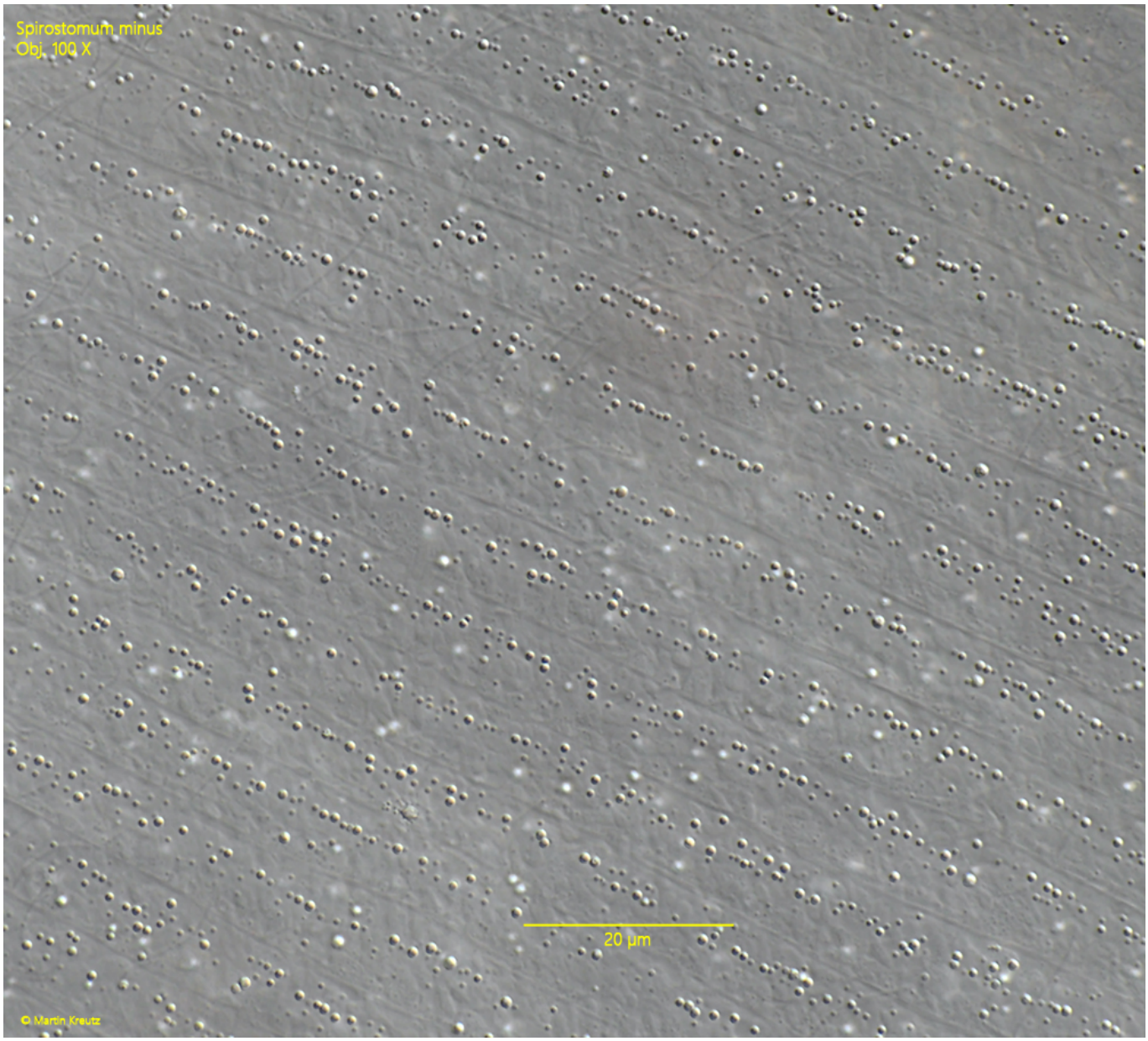


Fig. 8: *Spirostomum minus*. The colorless granules beneath the pellicle are arranged between the rows of cilia. The granules resembles to oily droplets and have a diameter 0f 0.5–1.5 µm. Obj. 100 X.