Spirostomum minus Roux, 1901

Most likely ID: n.a.

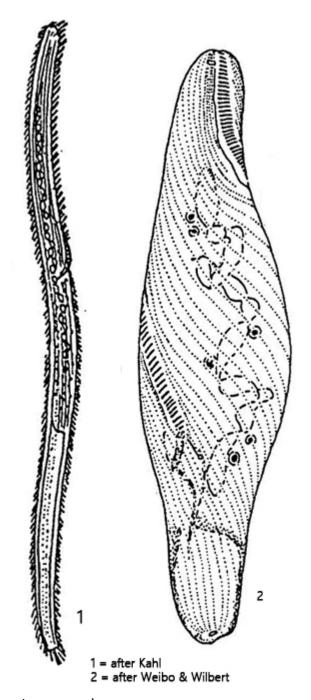
Synonym: n.a.

Sampling location: <u>Ulmisried</u>, <u>Purren pond</u>, <u>Mainau pond</u>, <u>Simmelried</u>

Phylogenetic tree: Spirostomum minus

Diagnosis:

- body elongate, worm-like
- body highly contractile
- length 300-800 µm
- \bullet 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.

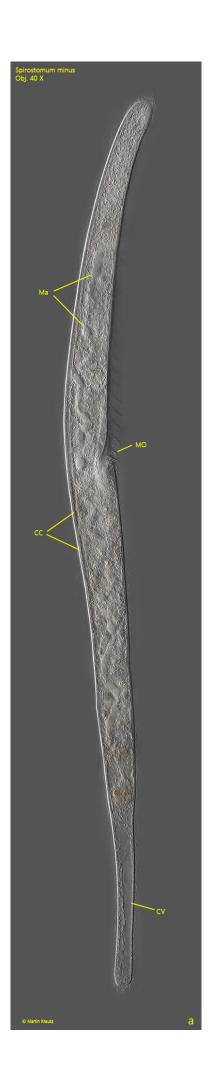
The adoral zone of the genus *Spirostomum* is strongly elongated and is located on the left side of a shallow groove that leads to the mouth opening. In Spirostomum minus, the adoral zone can account for up to 50 % of the body length. In my population it was about 40 %.



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



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



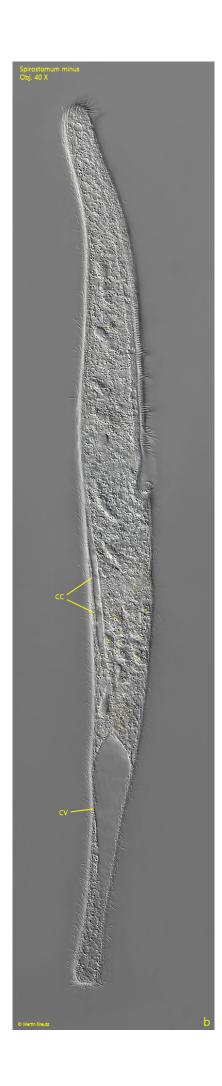
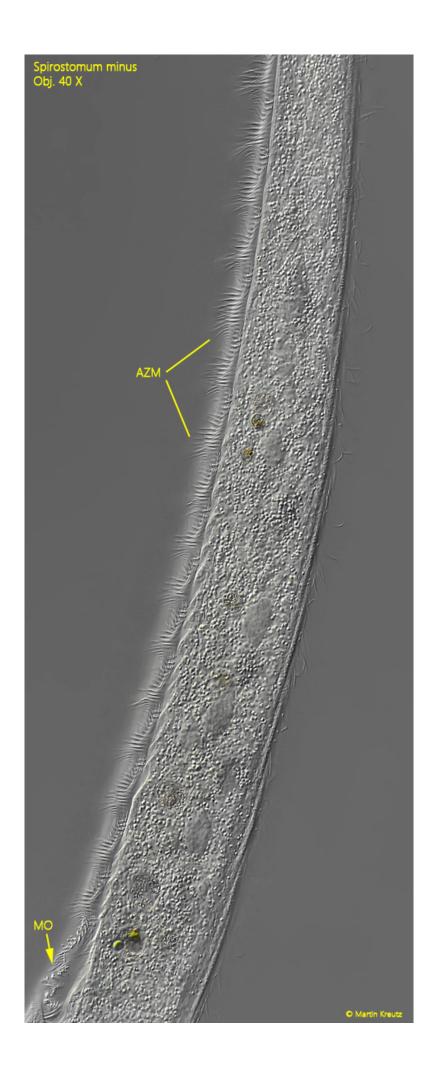


Fig. 3 a-b: Spirostomum minus. L =920 μ m (a) and 863 μ m (b). Two freely swimming specimens in detail. Note the dorsal collecting canal (CC) reaching from the contractile vacuole (CV) to the anterior end. Ma = macronucleus, MO = mouth opening. Obj. 40 X.





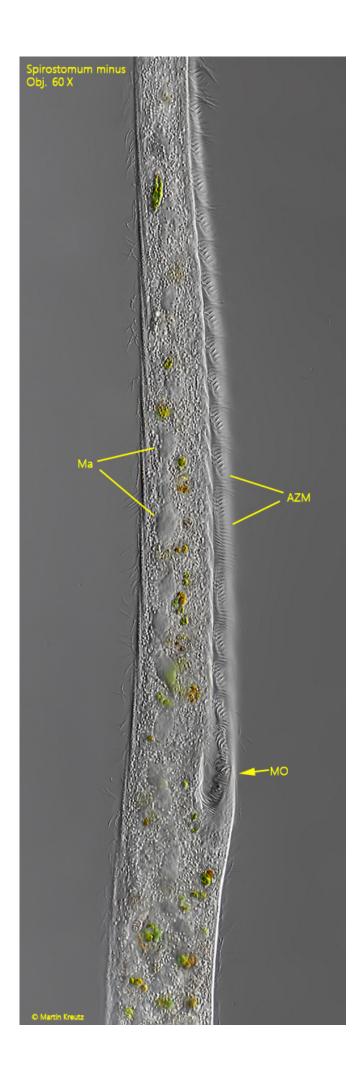


Fig. 5: Spirostomum minus. The adoral zone of membranelles (AZM) of a second specimen is leading to the mouth opening (MO). Obj. 40 X.

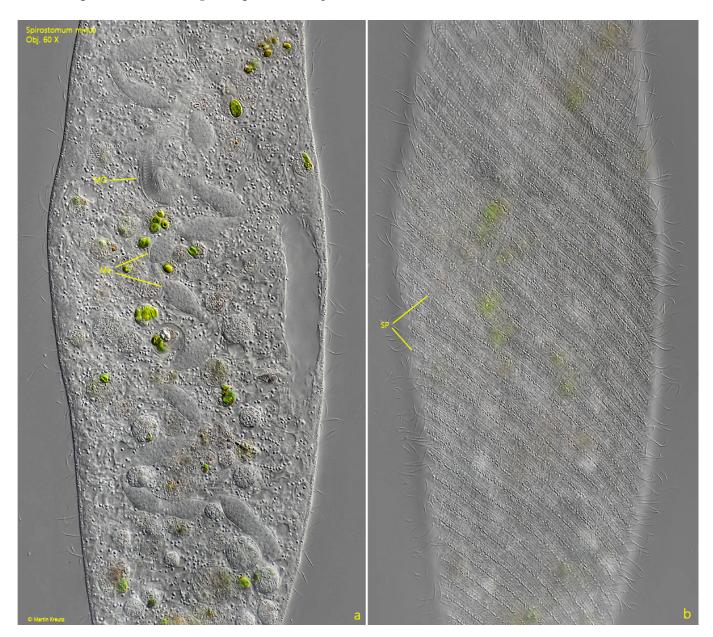


Fig. 6 a-b: Spirostomum minus. The nodules of the moniliform macronucleus (Ma) and the striation the pellicle (SP) caused by rows of colorless granules. MO = mouth opening. Obj. 60 X.

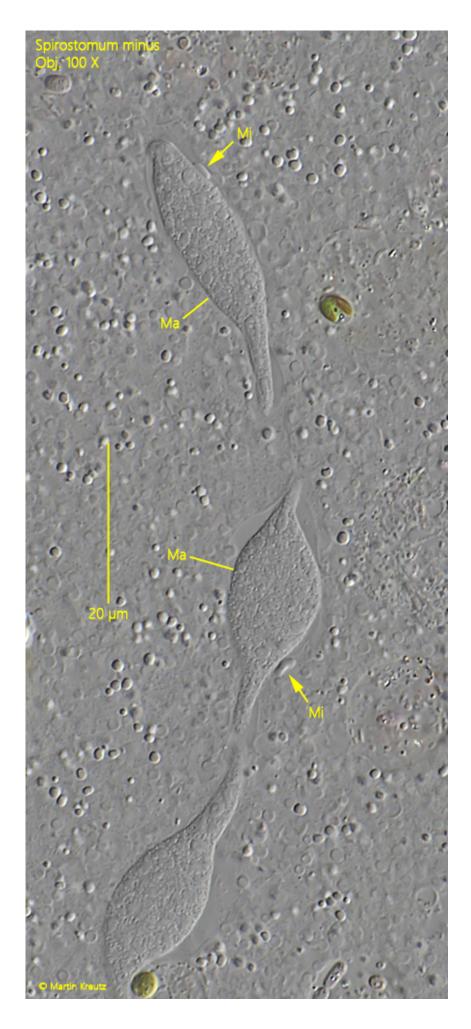


Fig. 7: Spirostomum minus. Three nodules of the moniliform macronucleus (Ma) in a squashed specimen. Note the small micronucle attached to the nodules. Obj. 100 X.

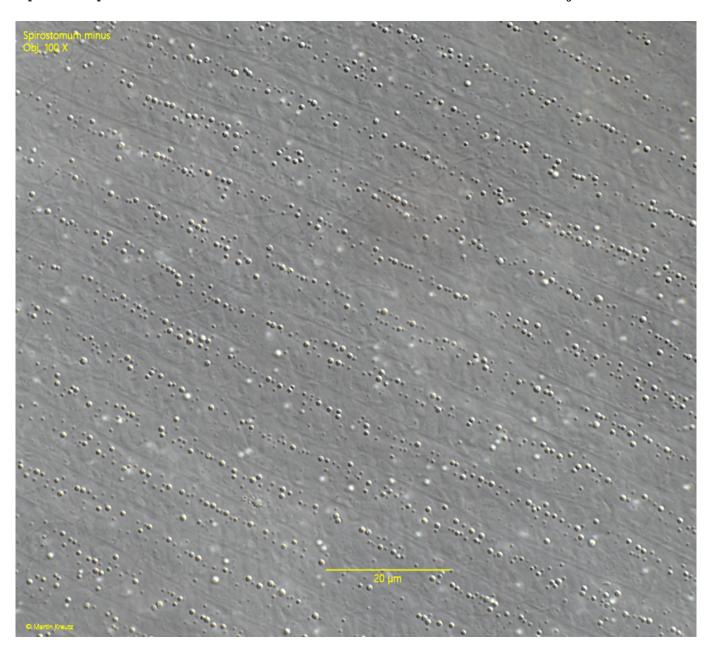


Fig. 8: Spirostomum minus. The colorless granules beneath the pellicle are arranged between the rows of cilial. The granules resembles to oily droplets and have a diameter Of $0.5-1.5 \mu m. Obj. 100 X.$