

***Perispira* 1**

Most likely ID: *Perispira* nov. spec.

Synonym: n.a.

Sampling location: [Ulmisried](#), [Simmelried](#)

Phylogenetic tree: Spathidiidae

Diagnosis:

- body elongated oval
- length 130–180 µm
- ridge of extrusomes emerges anterior
- ridge runs at first to left side, over dorsal side to right side, turn back to ventral side and reach the right side again at posterior end
- body often filled with oily droplets and granules
- contractile vacuole terminal
- macronucleus ellipsoid
- one small micronucleus
- extrusomes slightly curved rods, 18–21 µm long

No drawings from previous authors available.

Between 2003 and 2012, I found 6 specimens of a ciliate that possesses the characteristics of the genus *Perispira*. I found all specimens during the summer months from June to August in the years 2002–2022. Five specimens came from the upper mud layer in the [Simmelried](#) and one specimen (2014) from the [Ulmisried](#).

The essential characteristic of the genus *Perispira* is a clearly visible ridge of extrusomes, which runs in a spiral line from the anterior to the posterior end of the body. This principal course of the ridge is the same in the three species described so far: *Perispira ovum*, *Perispira strephosoma*, *Perispira carinata* and *Perispira pyriformis*.

In the specimens I examined, however, the course of the ridge fundamentally differs from that of the previously described species. It begins at the anterior end and already bends to the right side in the anterior quarter (s. fig. 1 c). There, the ridge describes a clearly visible 180° curve (s. figs. 1 b and 2 b) and returns below the equator to the ventral side to then encircle it (s. figs. 1 c and 2 c) and end on the dorsal side at the posterior end. This rather complex course differs so significantly from the previously described species that it must be a species not yet described. I provisionally designate it as *Perispira* 1. In addition to the unusual course of the ridge, the specimens of *Perispira* 1 are larger, measuring 130–180 µm, compared to the previously described species, which range between 70–130 µm.

The macronucleus of *Perispira* 1 is short ellipsoid with a small, attached micronucleus (s. fig. 6). The extrusomes of *Perispira* 1 are slightly curved, thin rods with a length of 18–21 µm (s. fig. 7). The dorsal brush is three-rowed and very short (s. fig. 8). The apical ridge of extrusomes appears to be surrounded by curved cilia (s. fig. 8), as Penard and Kahl described for *Perispira strephosoma*. However, this was only observed apically and not along the further course of the ridge as in *Perispira strephosoma*.

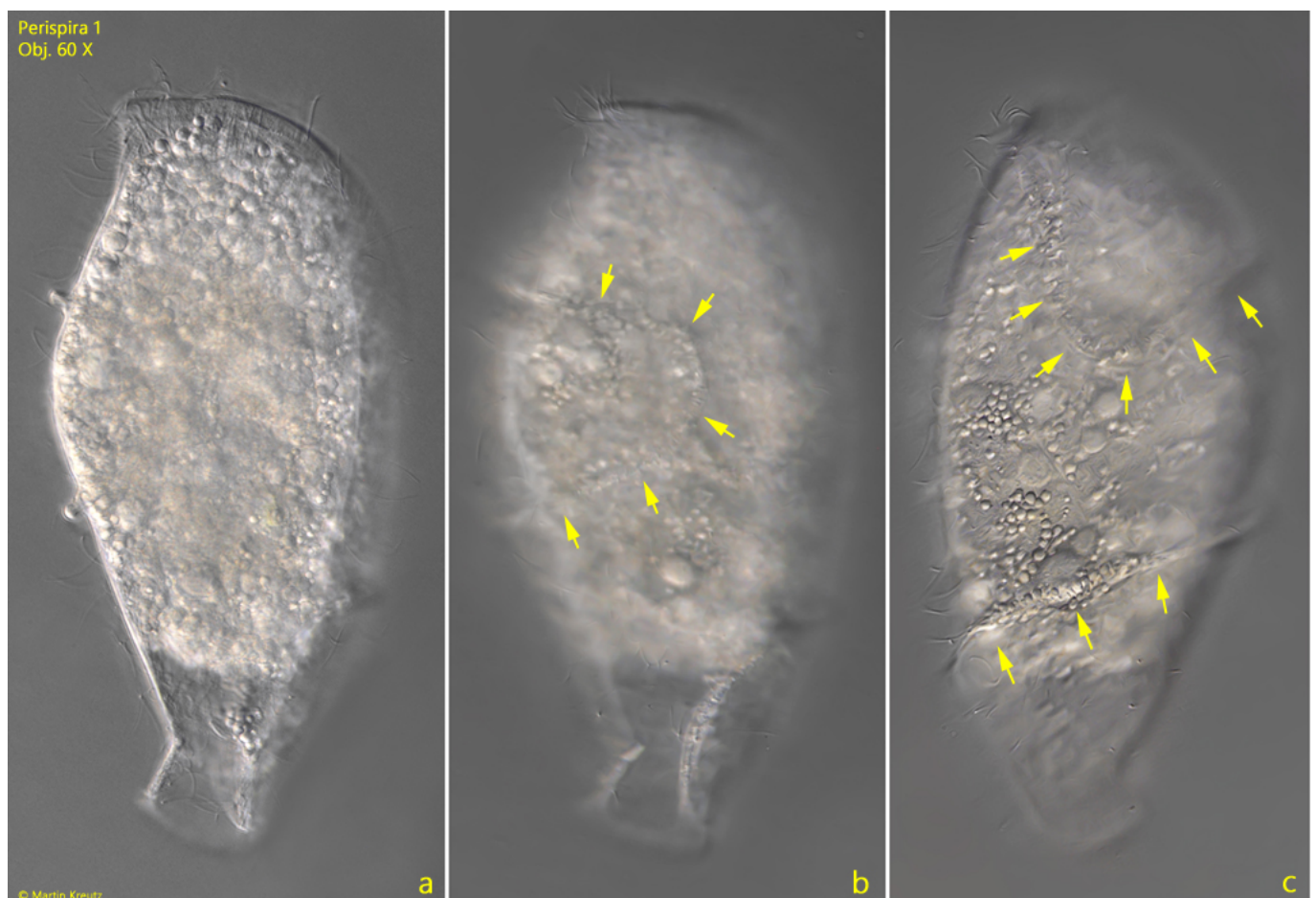


Fig. 1 a-c: *Perispira* 1. L = 180 μ m. A second freely swimming specimen from right (a, b) and from ventral (c). The specimen was found in August 2008 in the [Simmelried](#). The ridge of extrusomes starts anteriorly and run at first to the right side (c, upper arrows) where it describe a 180° curve (b, arrows) and crosses the ventral side in the posterior half (c, lower arrows) before it reach the posterior end on the dorsal side. Obj. 60 X.

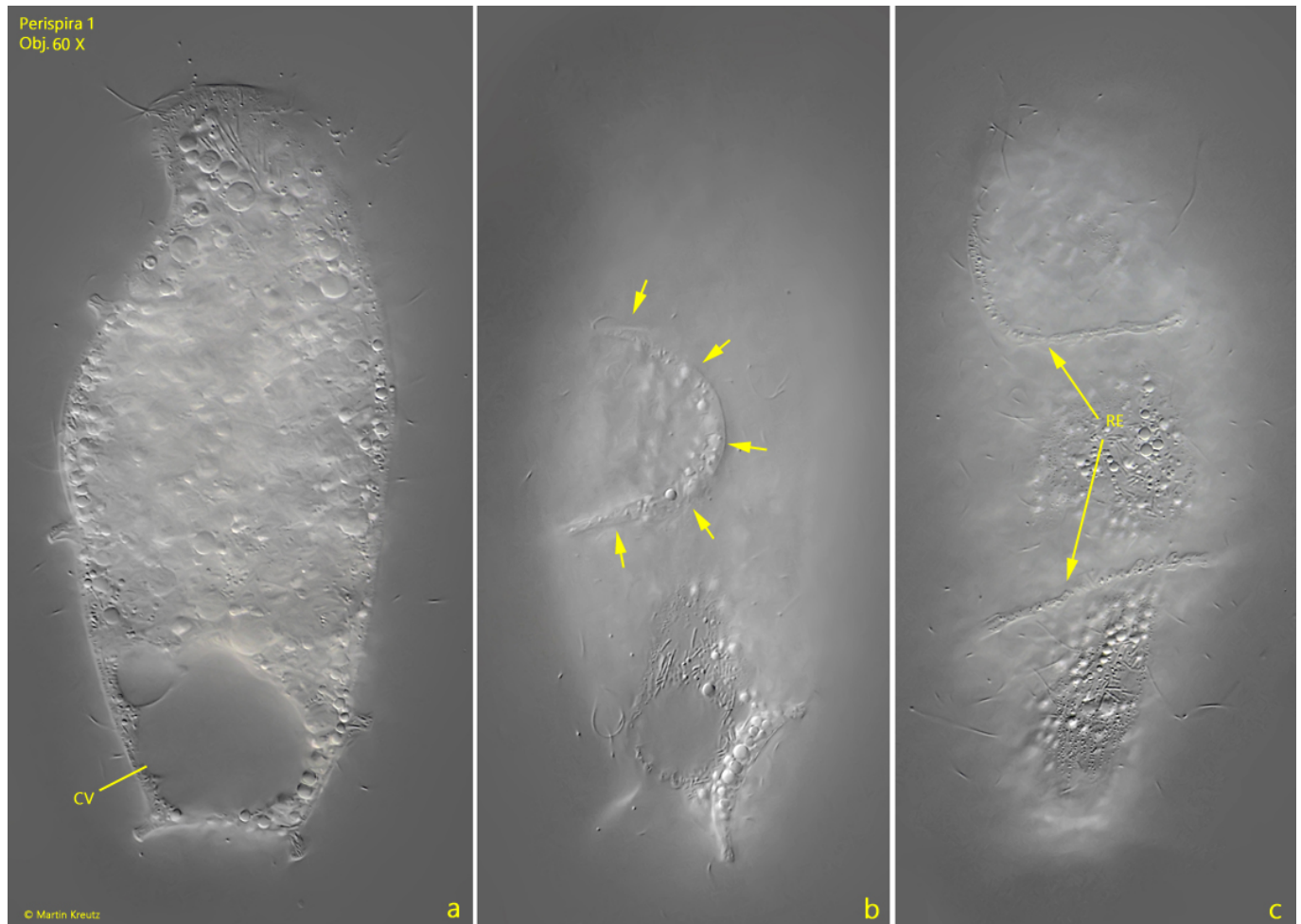


Fig. 2 a-c: *Perispira* 1. L = 145 μ m. A second freely swimming specimen from right (a, b) and from front right (c) found in July 2022 in the [Simmelried](#). Note the 180° curve of the ridge of extrusomes (RE) on the right side (b). CV = contractile vacuole. Obj. 60 X.

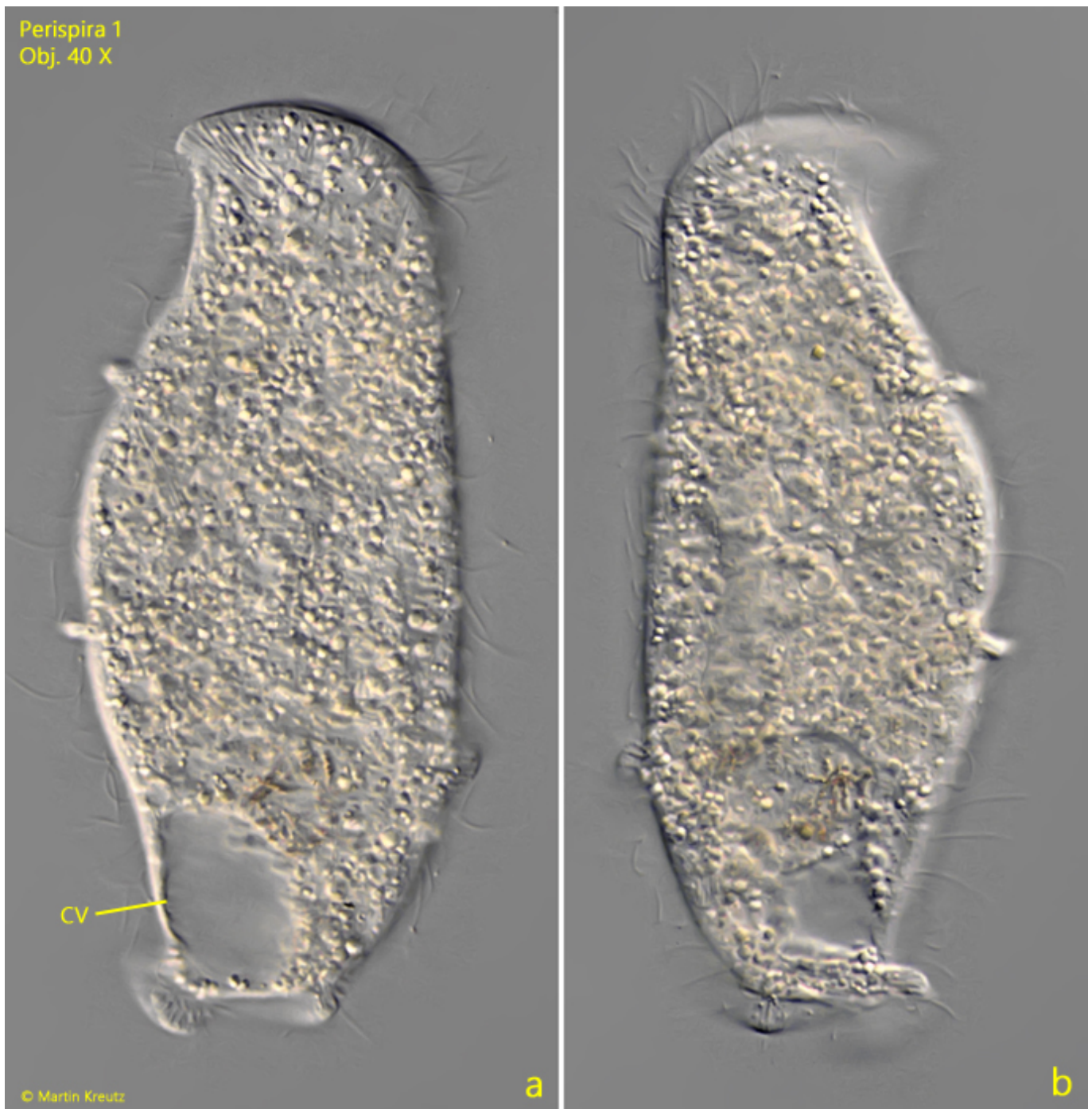


Fig. 3 a-b: *Perispira* 1. L = 171 μ m. A third freely swimming specimen from right (a) and from left (b). Obj. 40 X.

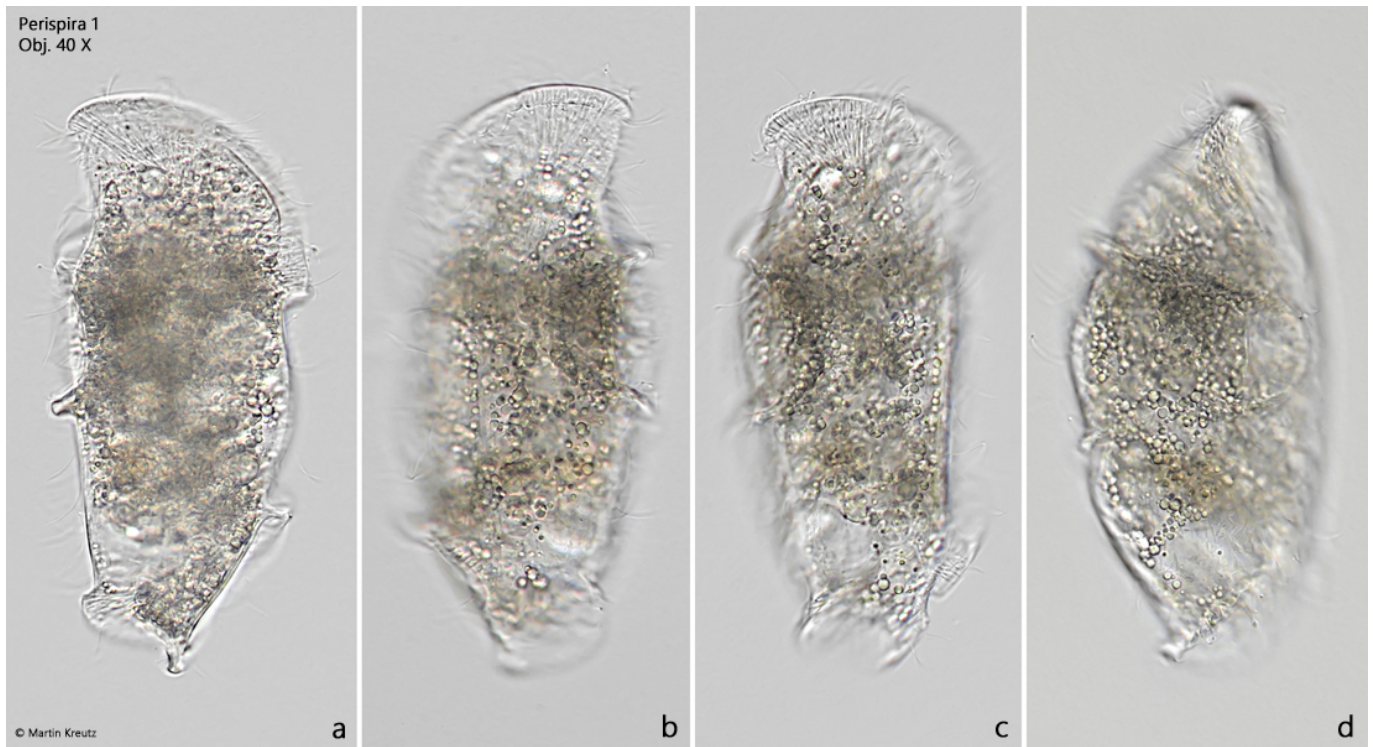


Fig. 4 a-d: *Perispira* 1. L = 155 μ m. A freely swimming specimen in brightfield illumination from right (a, c), left (b) . ventral side in the posterior half (c, lower arrows) before it reach the posterior end on the dorsal side. Obj. 40 X.

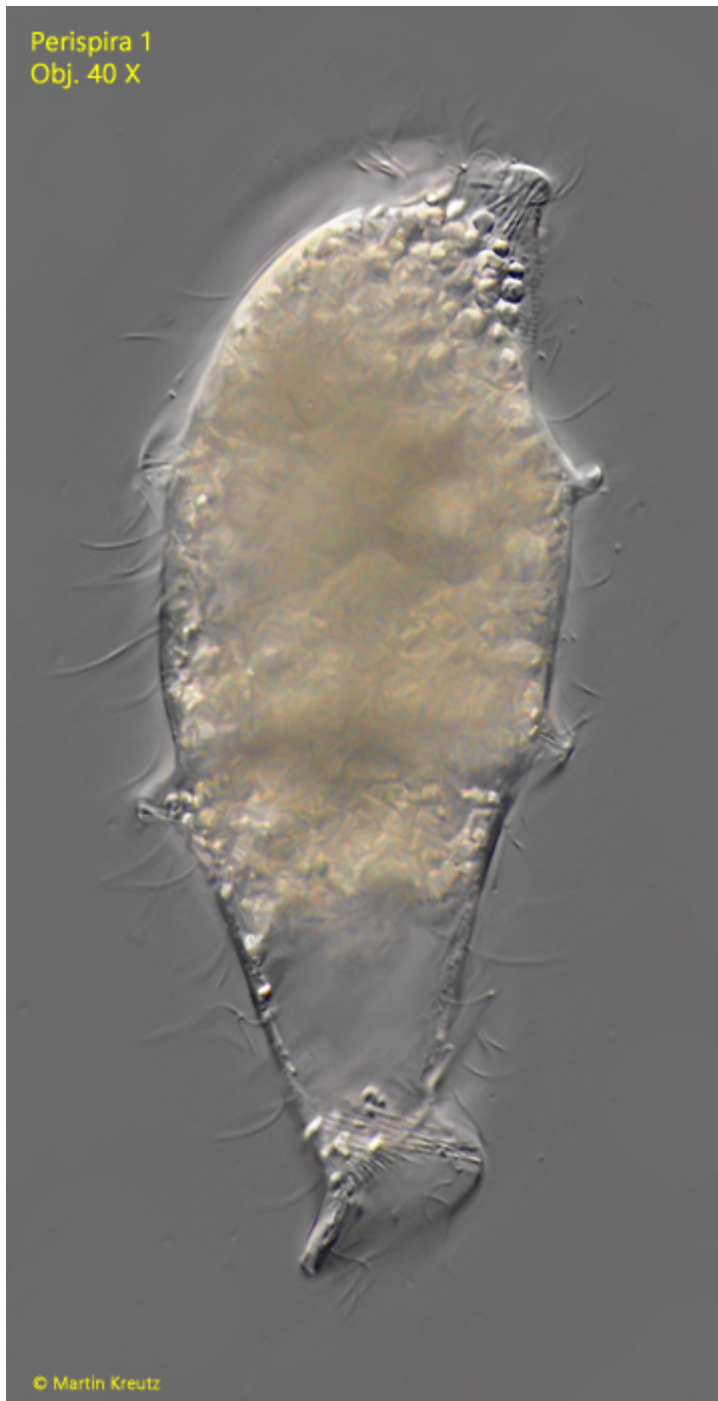


Fig. 5: *Perispira* 1. L = 180 μ m. The same specimen as shown in fig. 2-a-c from dorsal. Obj. 40 X.

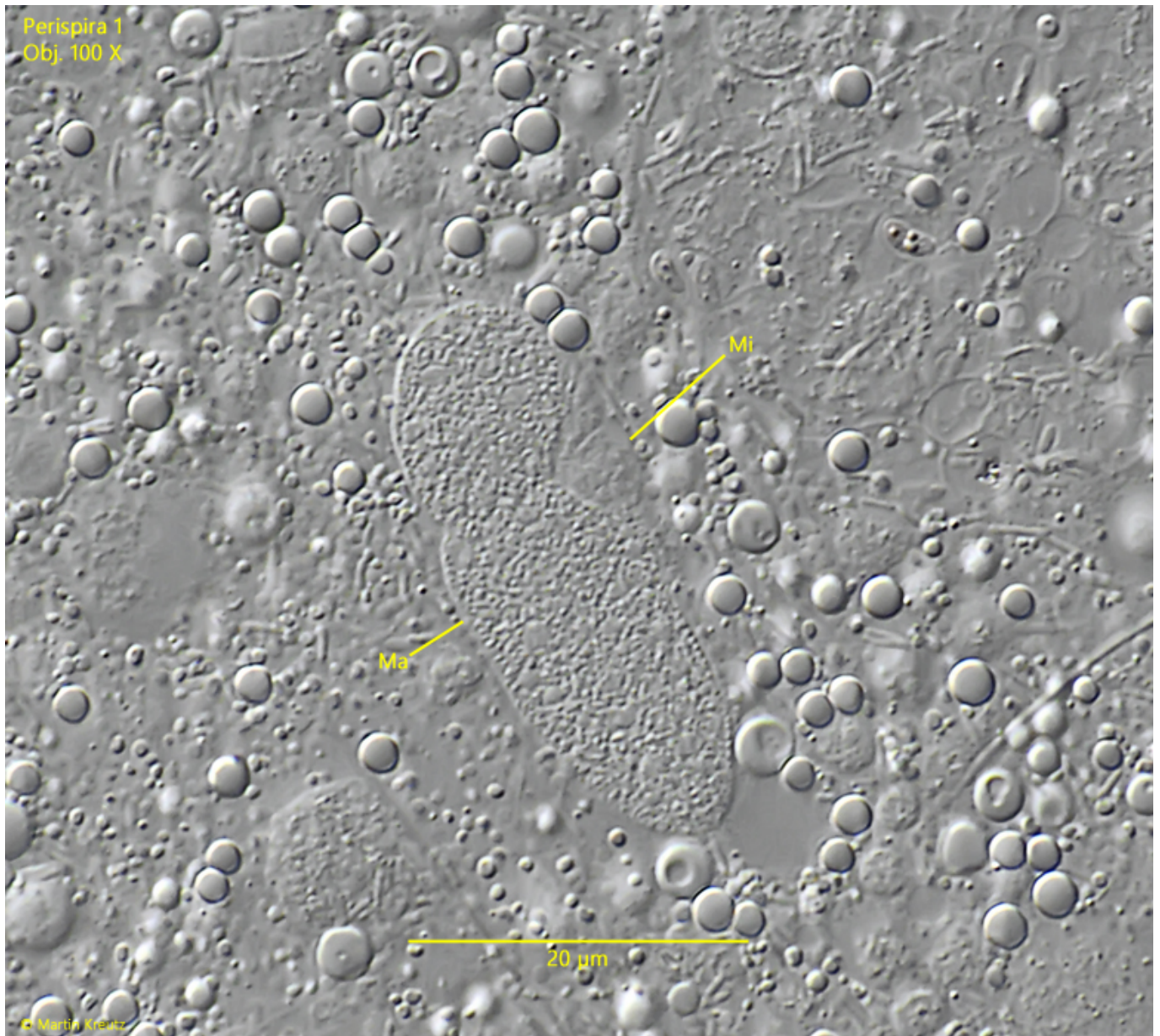


Fig. 6: *Perispira 1*. The macronucleus (Ma) and the micronucleus (Mi) in a squashed specimen. Obj. 100 X.

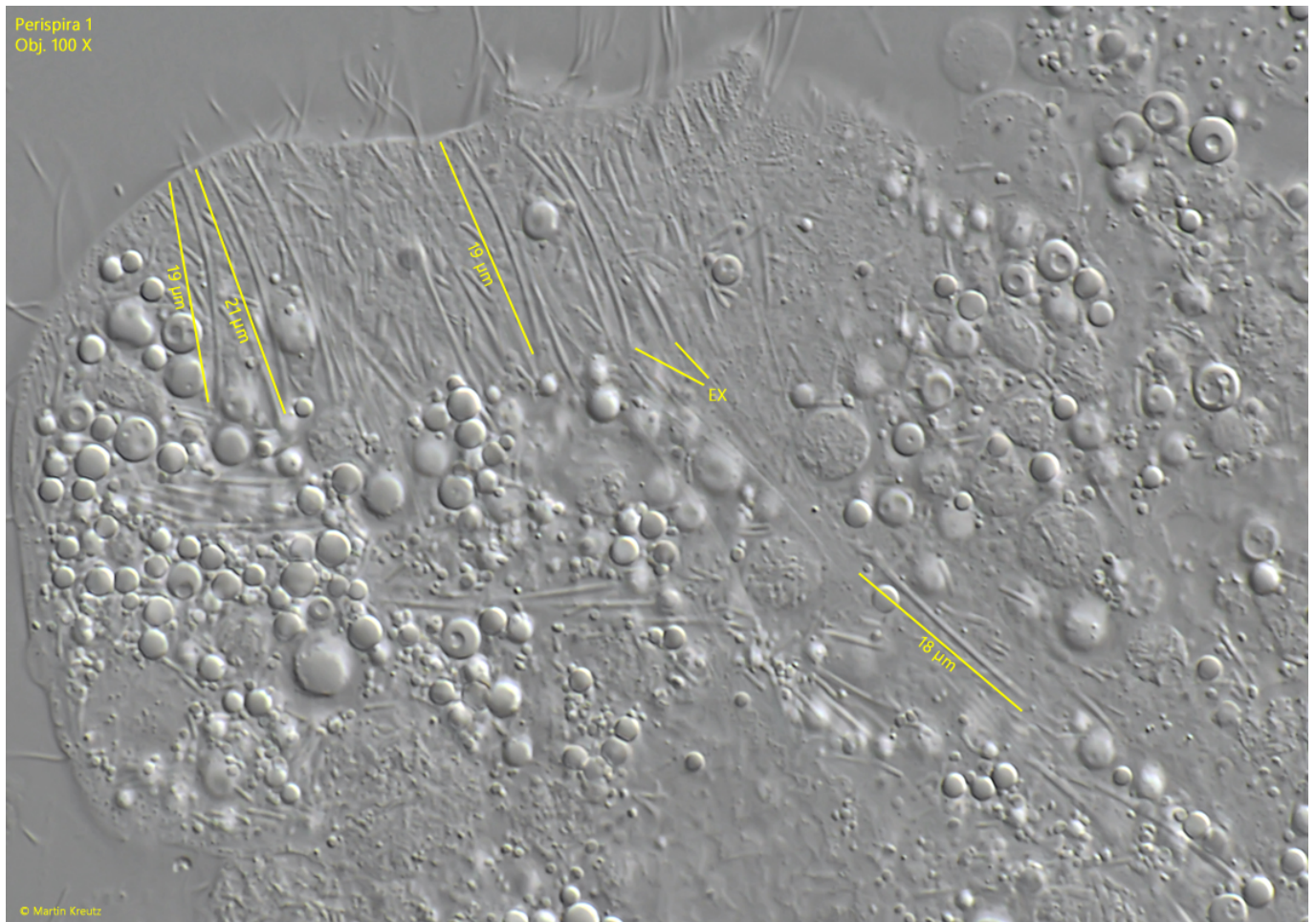


Fig. 7: *Perispira* 1. The slightly curved, rod-shaped extrusomes with a length of 18–21 µm in a strongly squashed specimen. Obj. 40 X.

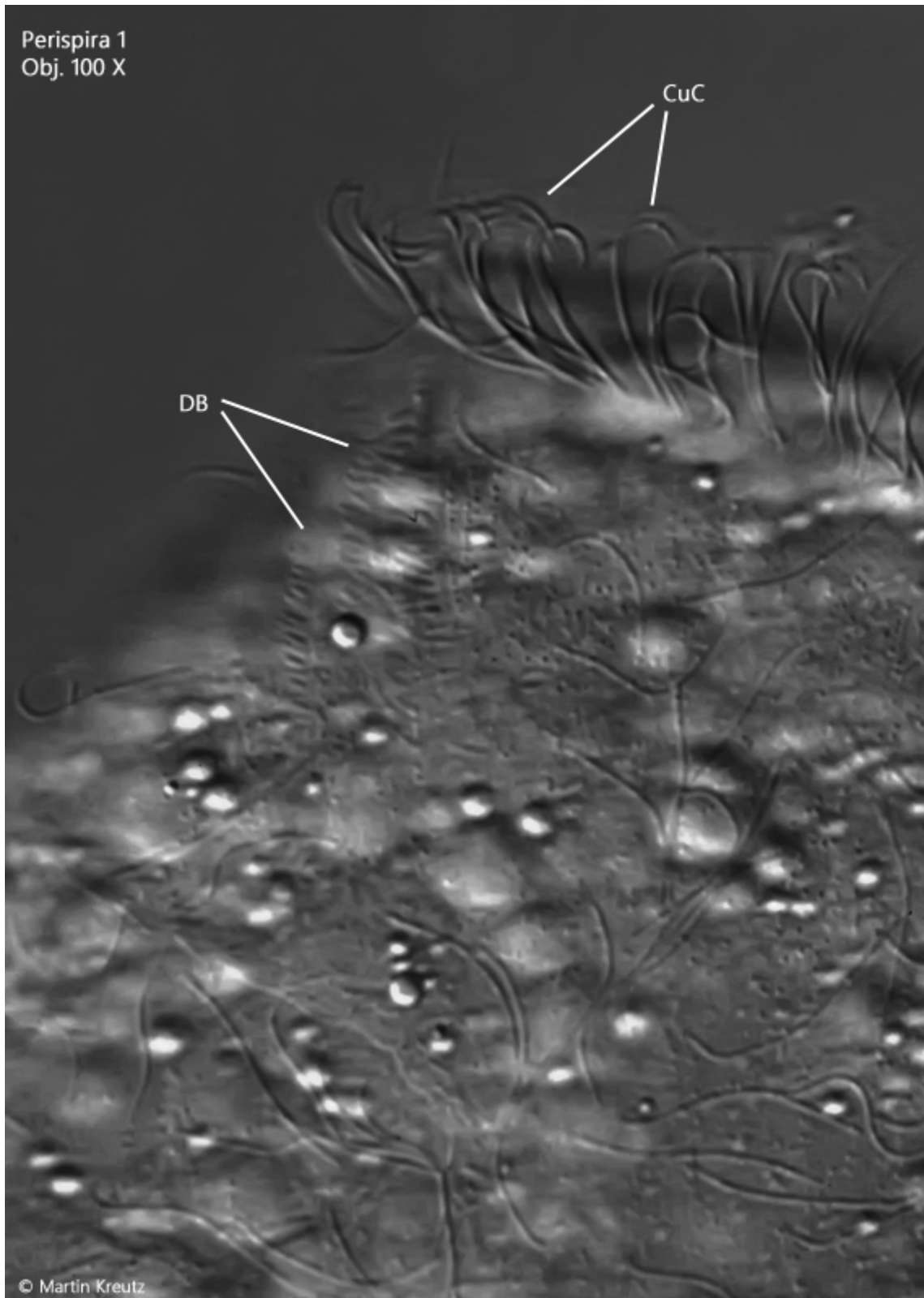


Fig. 8: *Perispira 1*. The dorsal brush (DB) in a slightly squashed specimen. The apical ridge of extrusomes is surrounded by curved cilia (CuC). Obj. 100 X.