Sphenostomella vernalis

(Dragesco & Groliere, 1969) Jankowski, 1980

Most likely ID: n.a.

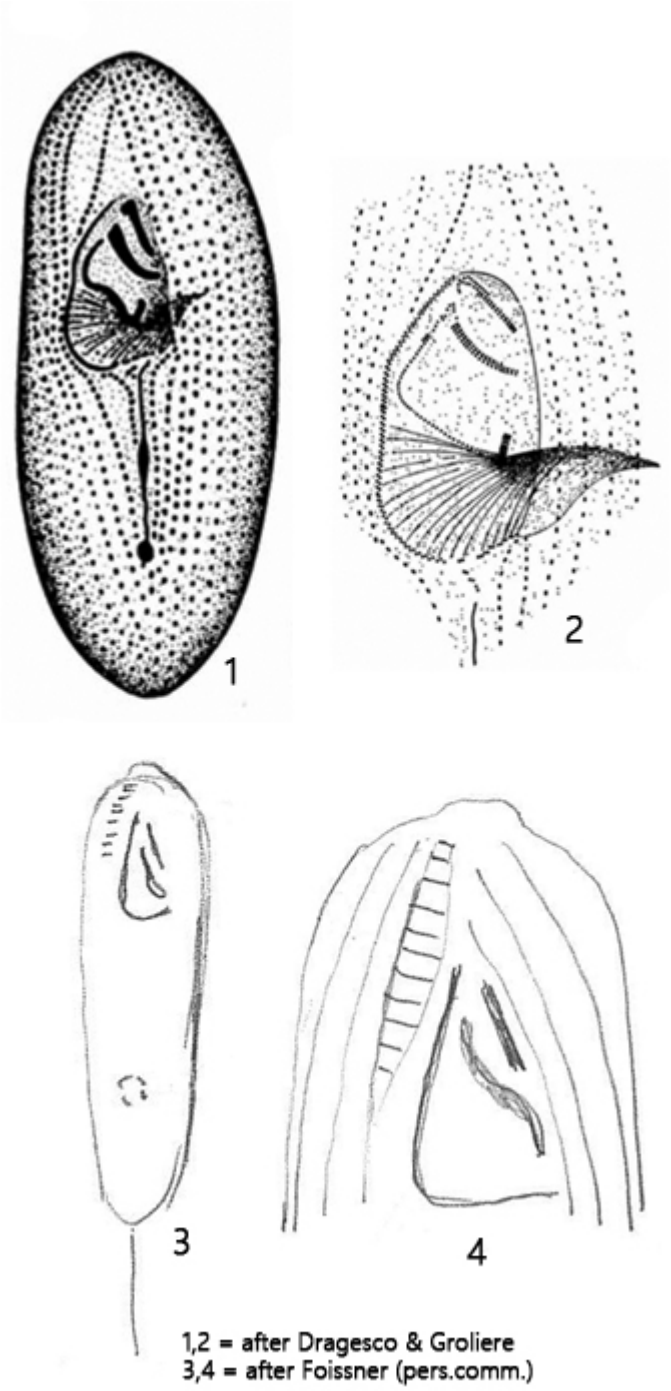
Synonym: *Sathrophilus vernalis*

Sampling location: Simmelried

Phylogenetic tree: *Sphenostomella vernalis*

Diagnosis:

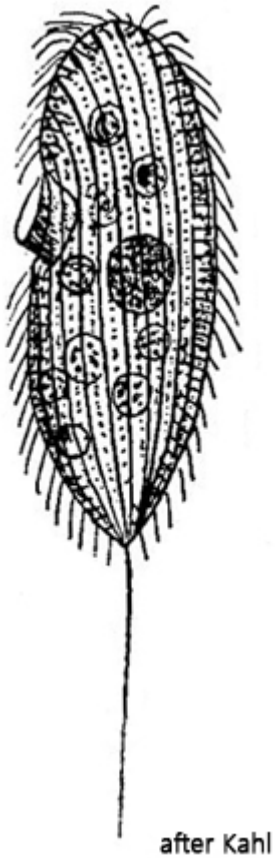
- body slender ellipsoid, posterior end slightly tapered
- length 80–100 µm
- oral apparatus shaped trigonal in anterior third
- macronucleus spherical
- one small micronucleus, adjacent to macronucleus
- contracile vacuole in posterior fifth
- excretion porus of contractile vacuole ventral
- cytoplasm orange by colored vesicles beneath pellicle
- extrusomes spindle-shaped, 6.5–8 µm long
- one caudal cilium



Sphenostomella vernalis

I regularly find *Sphenostomella vernalis* in the uppermost mud layer in the Simmelried. I have not yet been able to find the species in my other sampling sites.

Sphenostomella vernalis was originally described by Dragesco and Groliere (1969) as *Sathrophilus vernalis*. They only examined fixed material. As a result, they overlooked important features such as the apical stripe band and the caudal cilia. According to Foissner (pers. comm., 2003), the species may have been previously described as *Uronemopsis kenti* by Kahl (s. drawing below).



Uronemopsis kenti

In 1980, *Sathrophilus vernalis* was transferred to the genus *Sphenostomella* by Jankowski based on the organization of the oral apparatus.

Sphenostomella vernalis stands out in the samples due to its orange coloration. There are various shades between yellowish and reddish. The specimens swim quickly and are quite sensitive to coverslip. The caudal cilium is shed very quickly. The trigonally shaped mouth apparatus is located in the anterior third and bordered on the left side by an undulating membrane (s. fig. 2 a). Apically, a characteristic band of stripes can be seen to the left of the oral apparatus (s. figs. 2 b, 7 and 8). It is about 25 µm long and in strongly squashed specimens it can be seen that the stripes have the shape of tuning forks (s. fig. 8).

The orange coloration is caused by large vesicles, which are arranged under the pellicle (s. figs. 3 and 4). According to Foissner (pers. comm., 2003), these could be greatly enlarged mitochondria. In fact, there are no “normal” mitochondria in the cytoplasm of *Sphenostomella vernalis* visible with a length of 1–3 µm.

Fig. 1 a-d: *Sphenostomella vernalis*. L = 92 µm. A freely swimming specimen from ventral (a, b), right (c) and from left (d). CC = caudal cilium, CV = contractile vacuole. Obj. 60 X.

Fig. 2 a-b: *Sphenostomella vernalis*. A slightly squashed specimen from ventral. Note the trigonally shaped oral apparatus (OA) and the the apical stripe band left to the oral apparatus. EP = excretion porus of the contractile vacuole. Obj. 100 X.

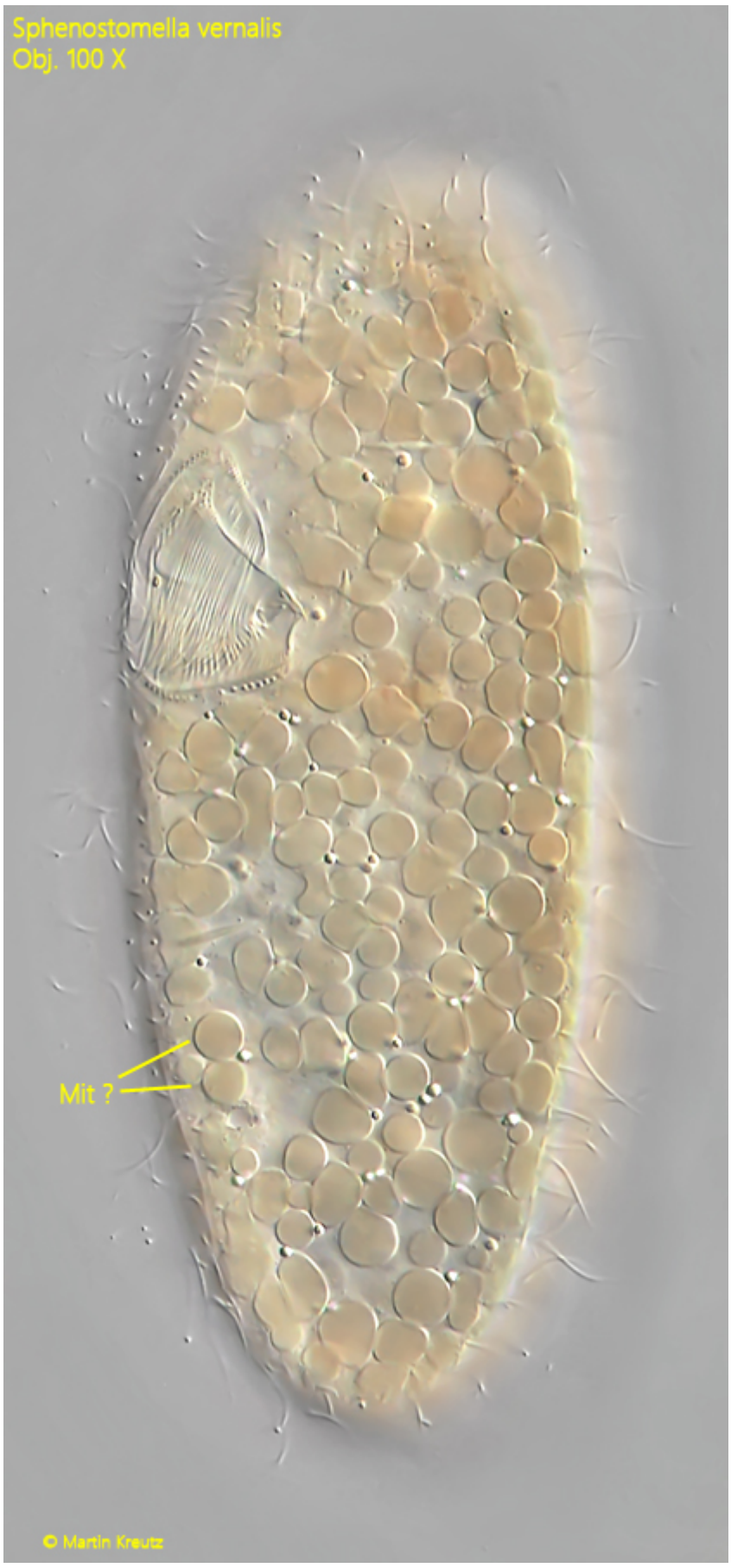


Fig. 3: *Sphenostomella vernalis*. A slightly squashed specimen from left with focal plane one orange colored vesicles beneath the pellicle. Probably these vesicles are

enlarged and colored mitochondria (Mit ?). Obj. 100 X.

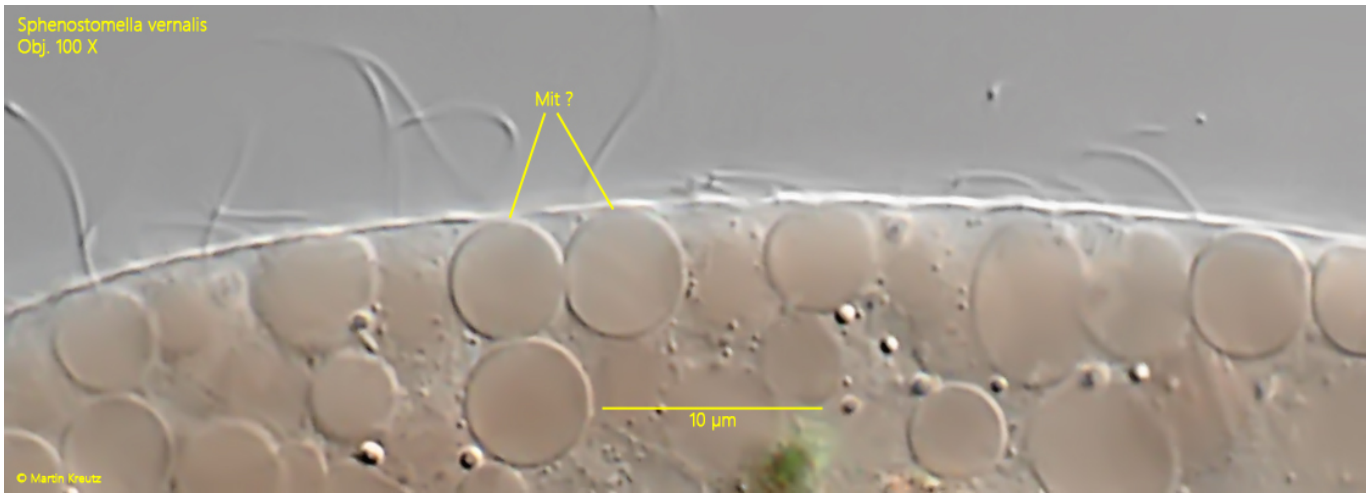


Fig. 4: *Sphenostomella vernalis*. The orange colored vesicles have a diameter of about 5 µm. Probably this are enlarged mitochondria (Mit ?). Obj. 100 X.


Sphenostomella vernalis
Obj. 100 X
6.8 µm
7.5 µm
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Fig. 5: *Sphenostomella vernalis*. The spindle-shaped extrusomes are 6.5–8 µm long and arranged beneath the pellicle. Obj. 100 X.

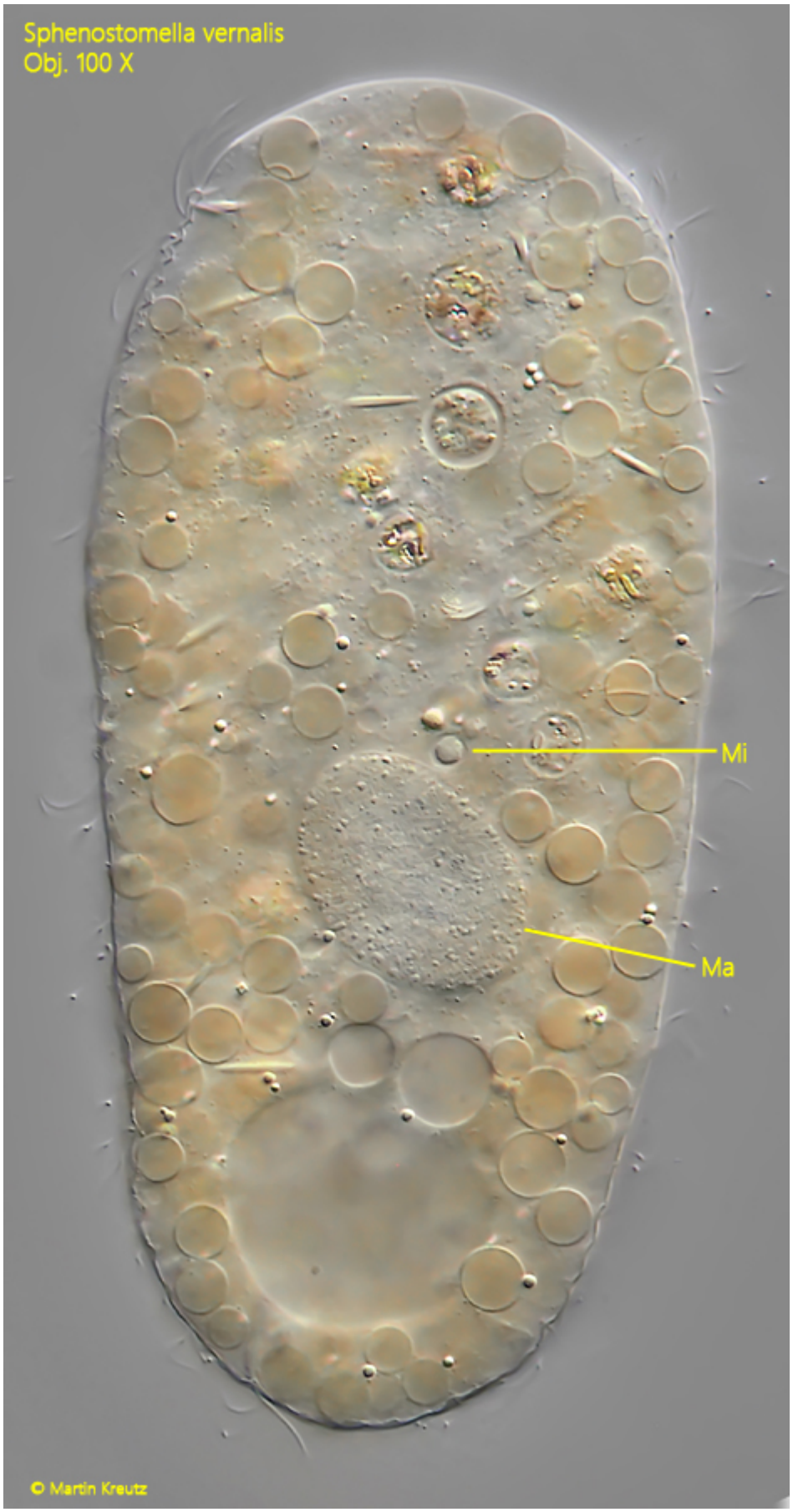

Fig. 6: *Sphenostomella vernalis*. The macronucleus (Ma) and the small micronucleus (Mi) in a squashed specimen. Obj. 100 X.

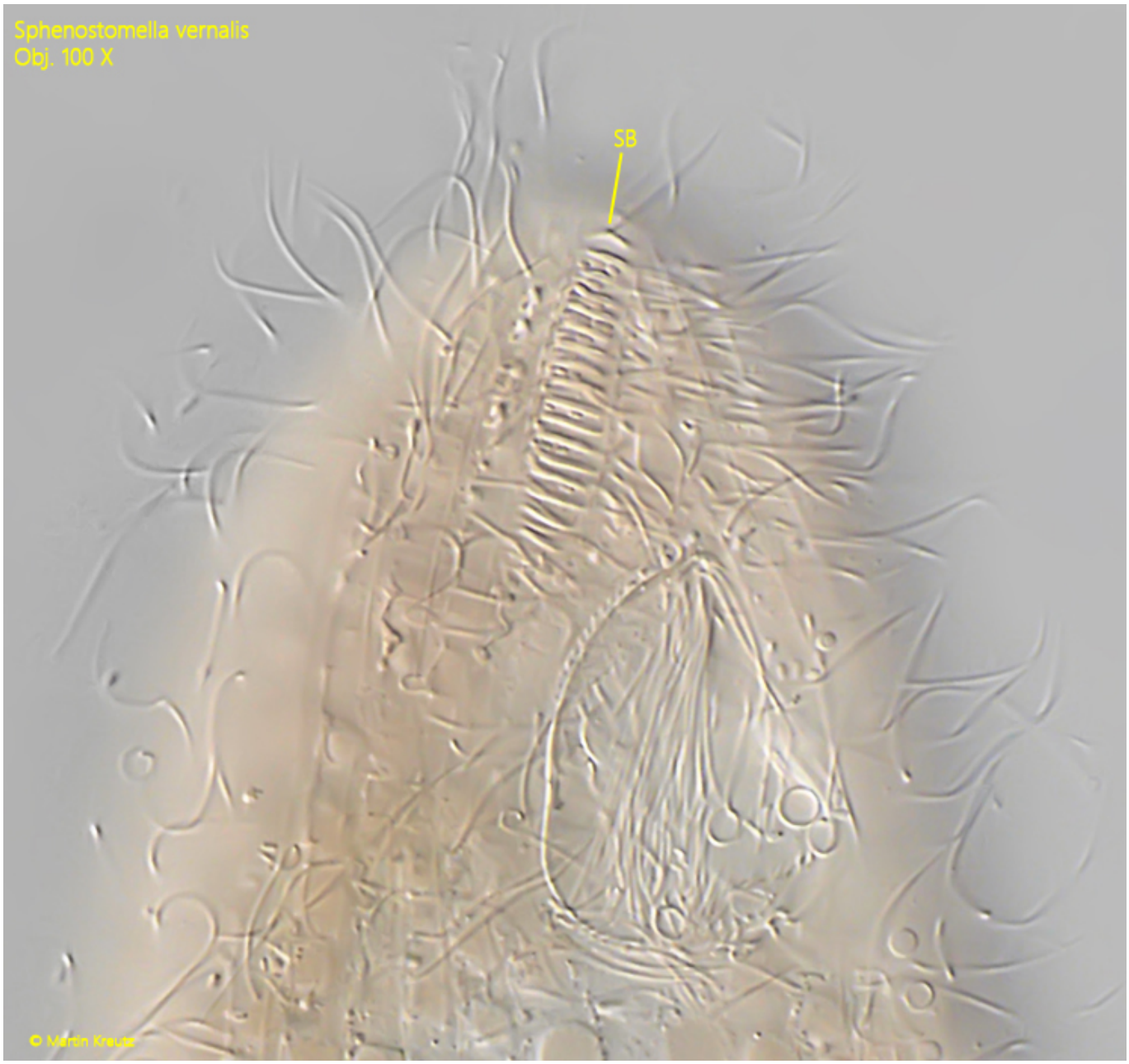

Fig. 7: *Sphenostomella vernalis*. The apical stripe band (SB) in detail. It has a length of about 25 µm. Obj. 100 X.

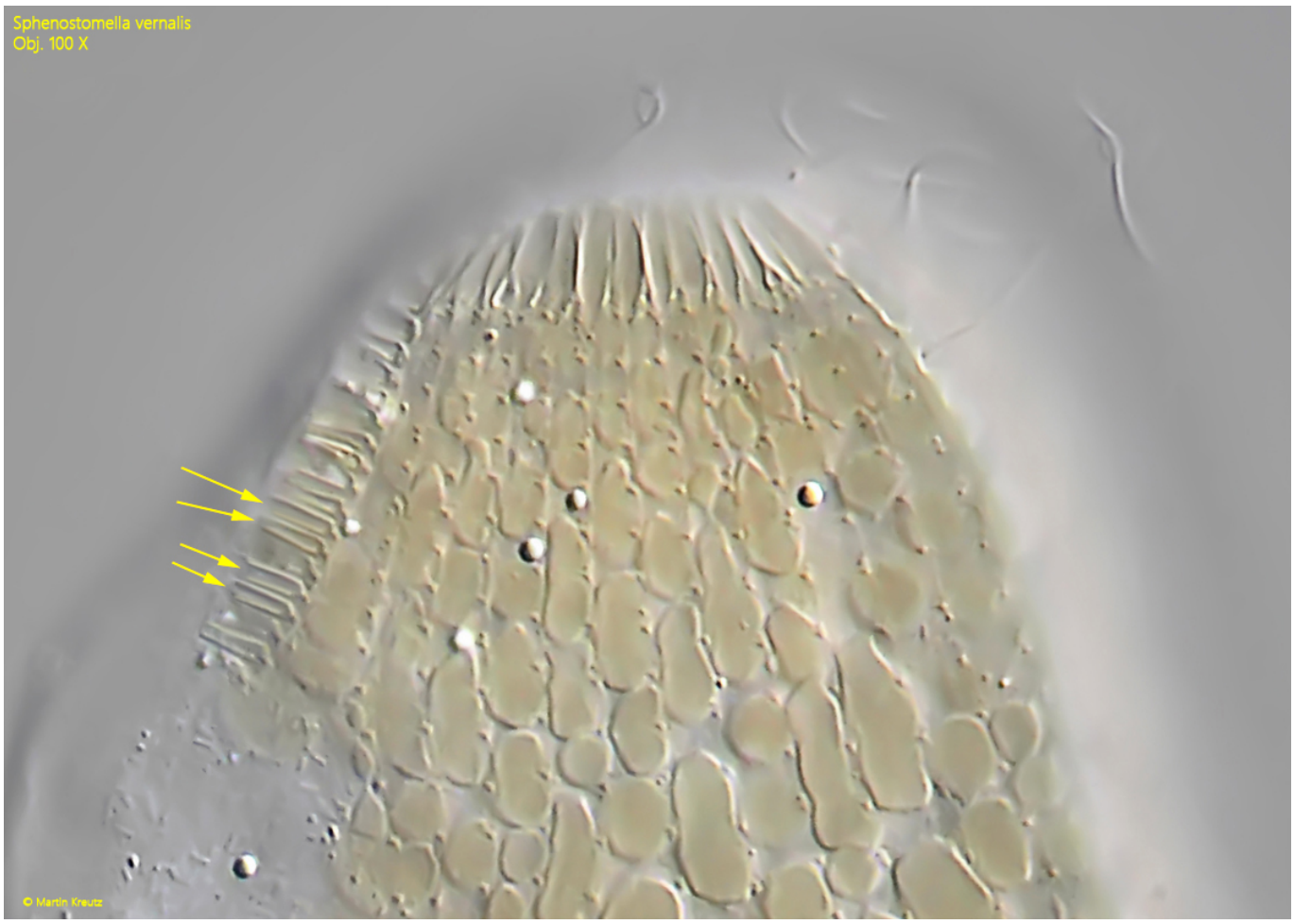

Fig. 8: *Sphenostomella vernalis*. The apical stripe band in a strongly squashed specimen. The stripes have the shape of a tuning fork (arrows). Obj. 100 X.