

***Obertrumia aurea***

**(Ehrenberg, 1834) Foissner, 1987**

**Most likely ID:** n.a.

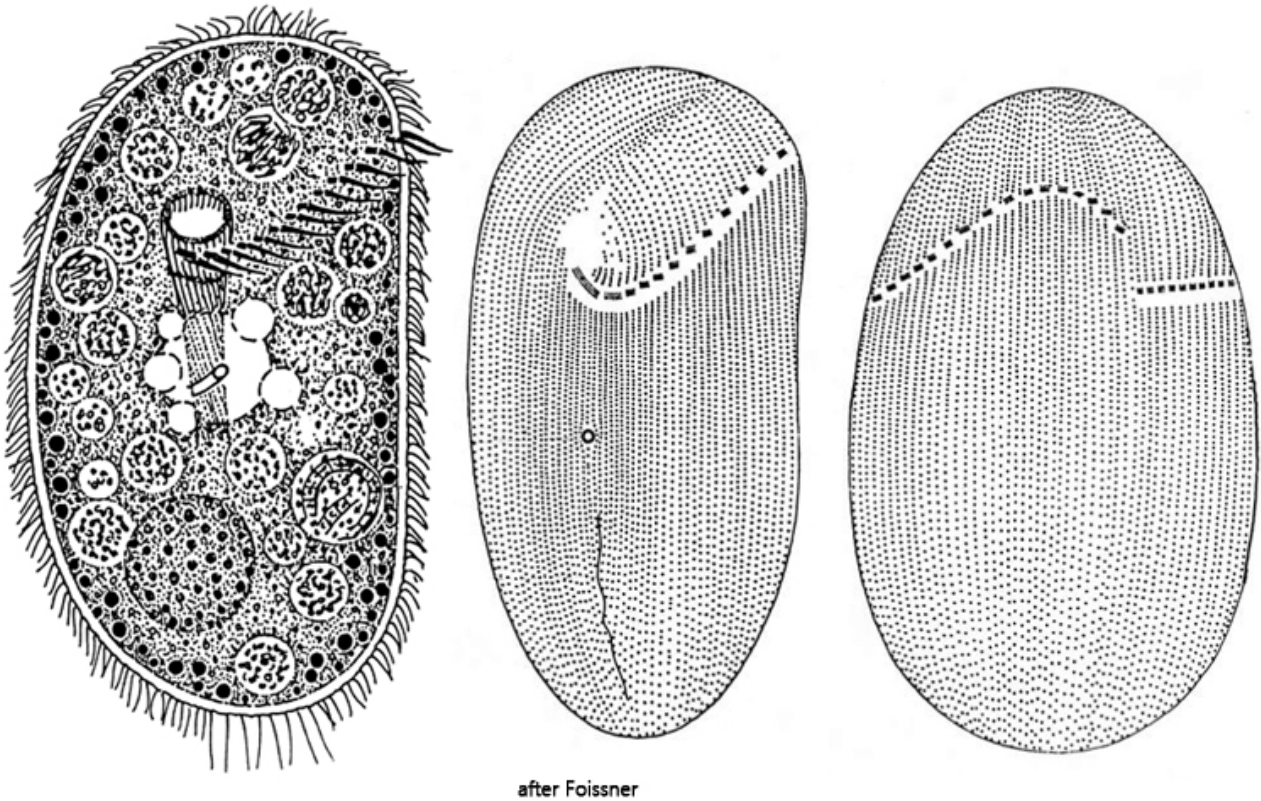
**Synonym:** n.a.

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

**Phylogenetic tree:** [Obertrumia aurea](#)

**Diagnosis:**

- body broad ellipsoid
- length 120–250 µm
- oral basket of 16–28 slightly twisted rods
- ring structure in distal third of basket
- macronucleus globular, in posterior half
- 1–4 spherical micronuclei adjacent to macronucleus
- about 100–120 longitudinal rows of cilia
- synhymenium ventrally S-shaped, dorsally straight
- contractile vacuole mid-body, one excretion pore ventral
- extrusomes inconspicuous (visible after staining)



## Obertrumia aurea

I find *Obertrumia aurea* frequently and regularly, especially between floating plant masses. Like many other nassulid ciliates, it feeds on trichal cyanobacteria such as *Anabaena* or *Oscillatoria*. *Obertrumia aurea* is often strikingly colored by this food, because the food vacuoles change color during the digestion process. Orange and yellow tones predominate (name).

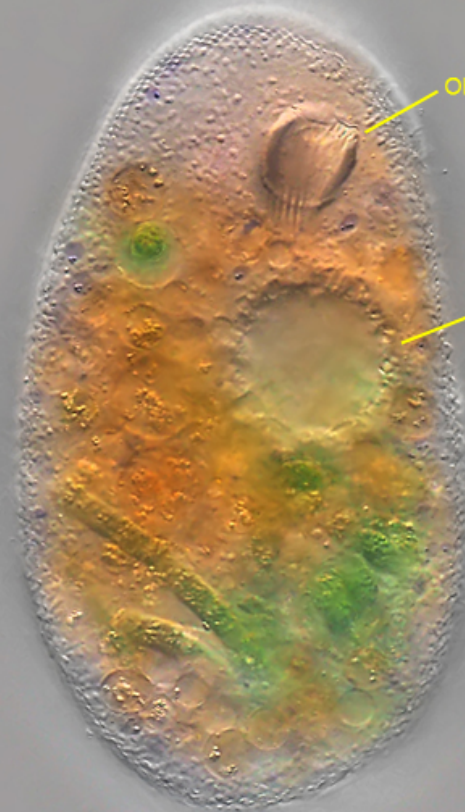
The oral basket of *Obertrumia aurea* consists of slightly twisted nematodesmal rods that are quite thick. Another striking feature is a thickening of the rods in the front third. This is in the same position on all rods, giving the impression of a ring (s. fig. 4 a-b). It is particularly pronounced in *Obertrumia aurea*.

*Obertrumia aurea* differs from the similar species *Nassula ornata* by the lack of extrusomes and the course of the synhymenium (s. below).

*Obertrumia aurea*  
Obj. 40 X



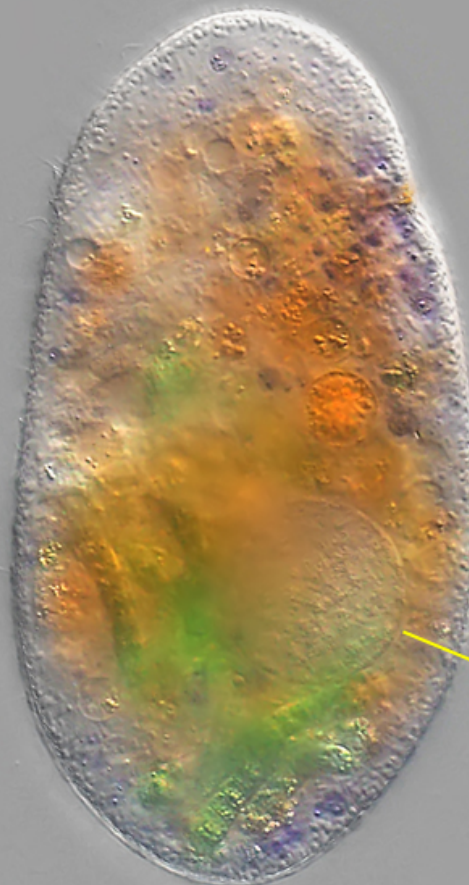
a



b



c

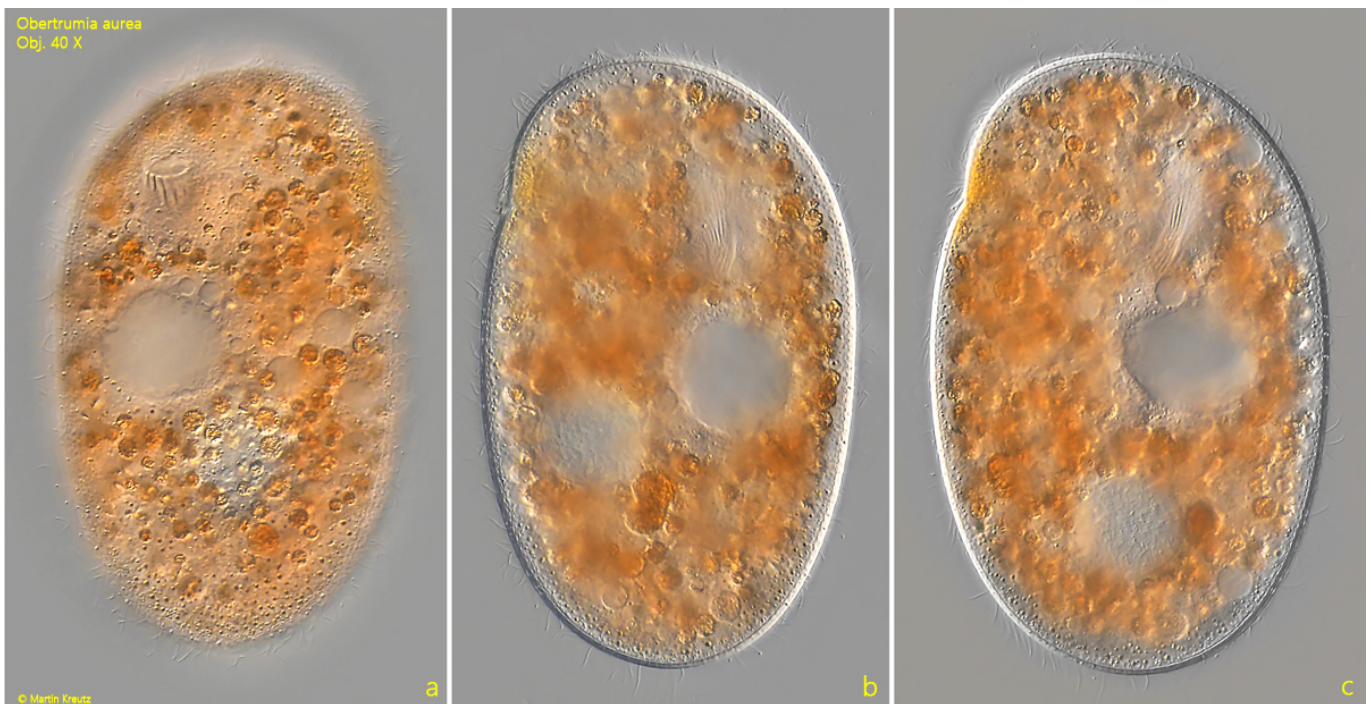


d

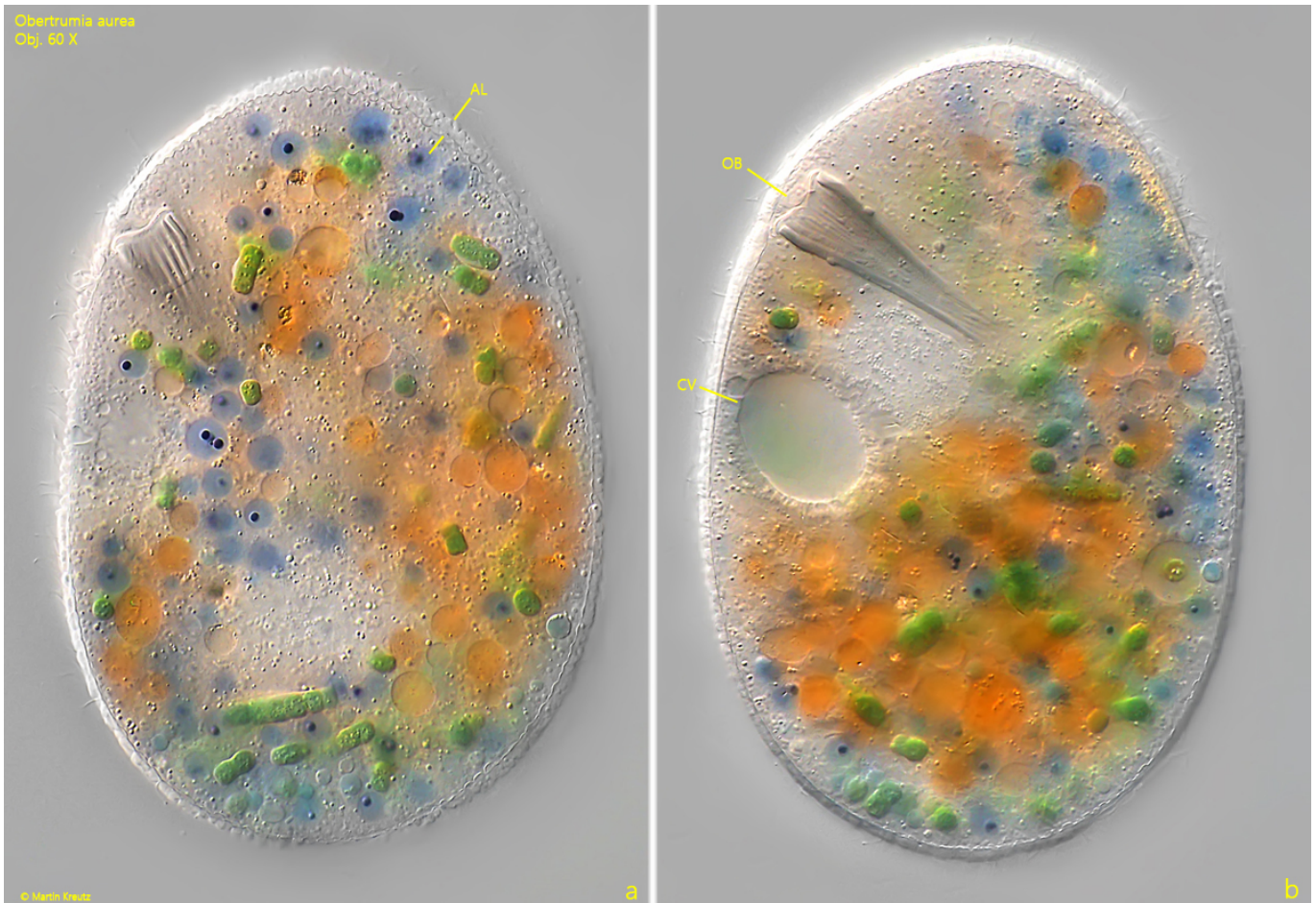
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**Fig. 1 a-d:** *Obertrumia aurea*. L = 182  $\mu\text{m}$ . A freely swimming specimen from ventral (a, b, d) and from left (c). Obj. 40 X.

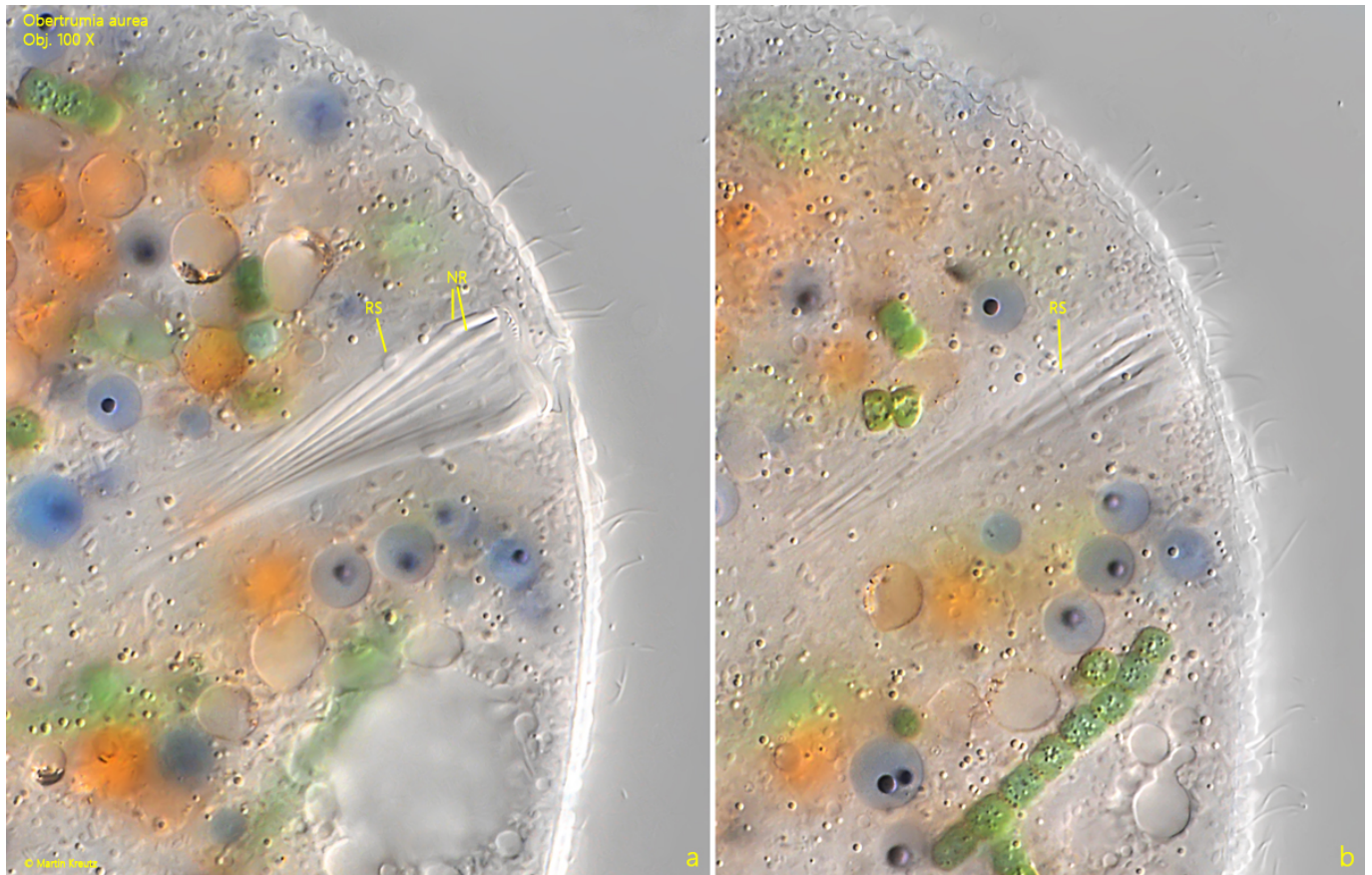


**Fig. 2 a-c:** *Obertrumia aurea*. L = 195  $\mu\text{m}$ . A second, slightly squashed specimen from ventral (a) and from dorsal (b, c). Obj. 40 X.



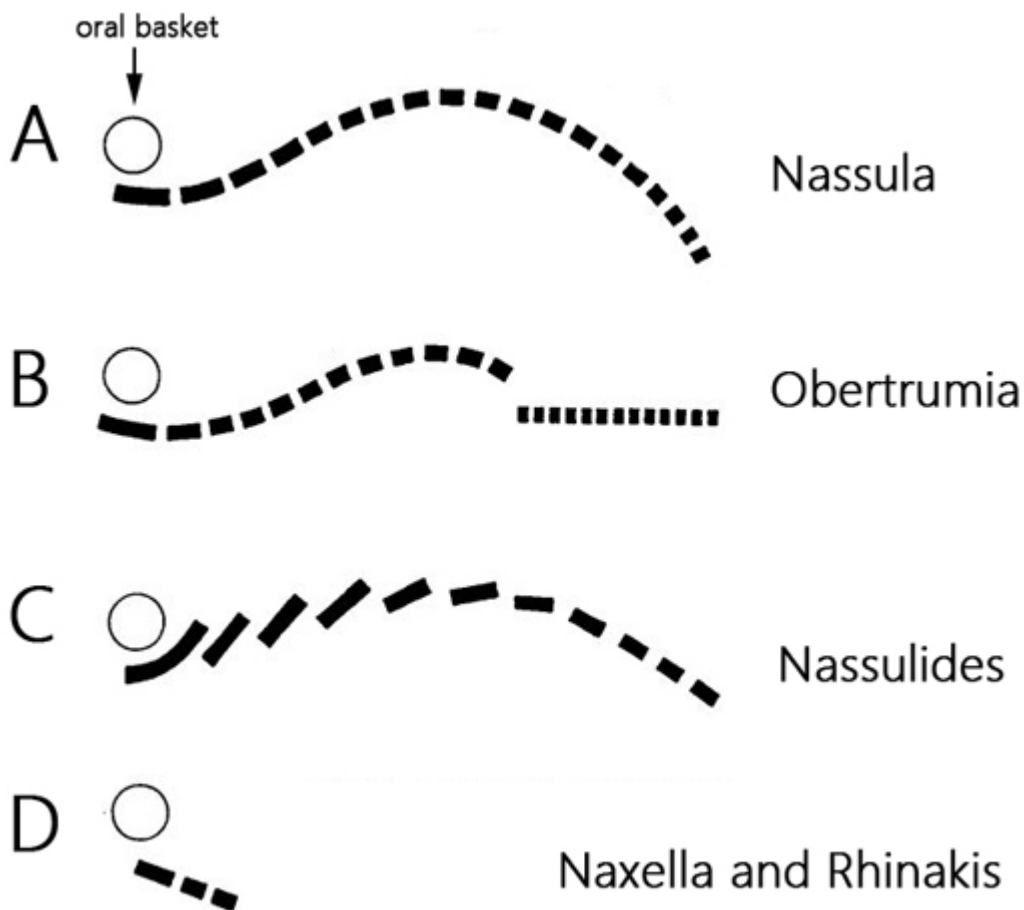


**Fig. 3 a-b:** *Obertrumia aurea*. L = 182  $\mu\text{m}$ . A slightly squashed specimen from left. Note the distinct alveolar layer (AL). CV = contractile vacuole, OB = oral basket. Obj. 60 X.



**Fig. 4 a-b:** *Obertrumia aurea*. The oral basket is composed of slightly twisted nematodesmal rods (NR). Note the ring structure (RS) near the distal third of the oral basket. Obj. 100 X.

The nassulid ciliates are characterized by the possession of a oral basket and the so-called synhymenium. The synhymenium is also known as the hypostomial ciliary band. It is a row of elongated cilia, which are arranged in groups. The synhymenium begins below the oral basket and varies in length and shape in different genera of nassulid ciliates. Foissner et al. (2002) schematically illustrated the shapes of the synhymenium for the different genera (s. fig. 5). In *Obertrumia aurea* it extends to the dorsal side, whereby it is slightly S-shaped ventrally and abruptly changes into a straight line dorsally and ends there (s. fig. 5 b). In contrast, in the genus *Nassula* the synhymenium runs S-shaped to the dorsal side without a straight line (s. fig. 5 a).

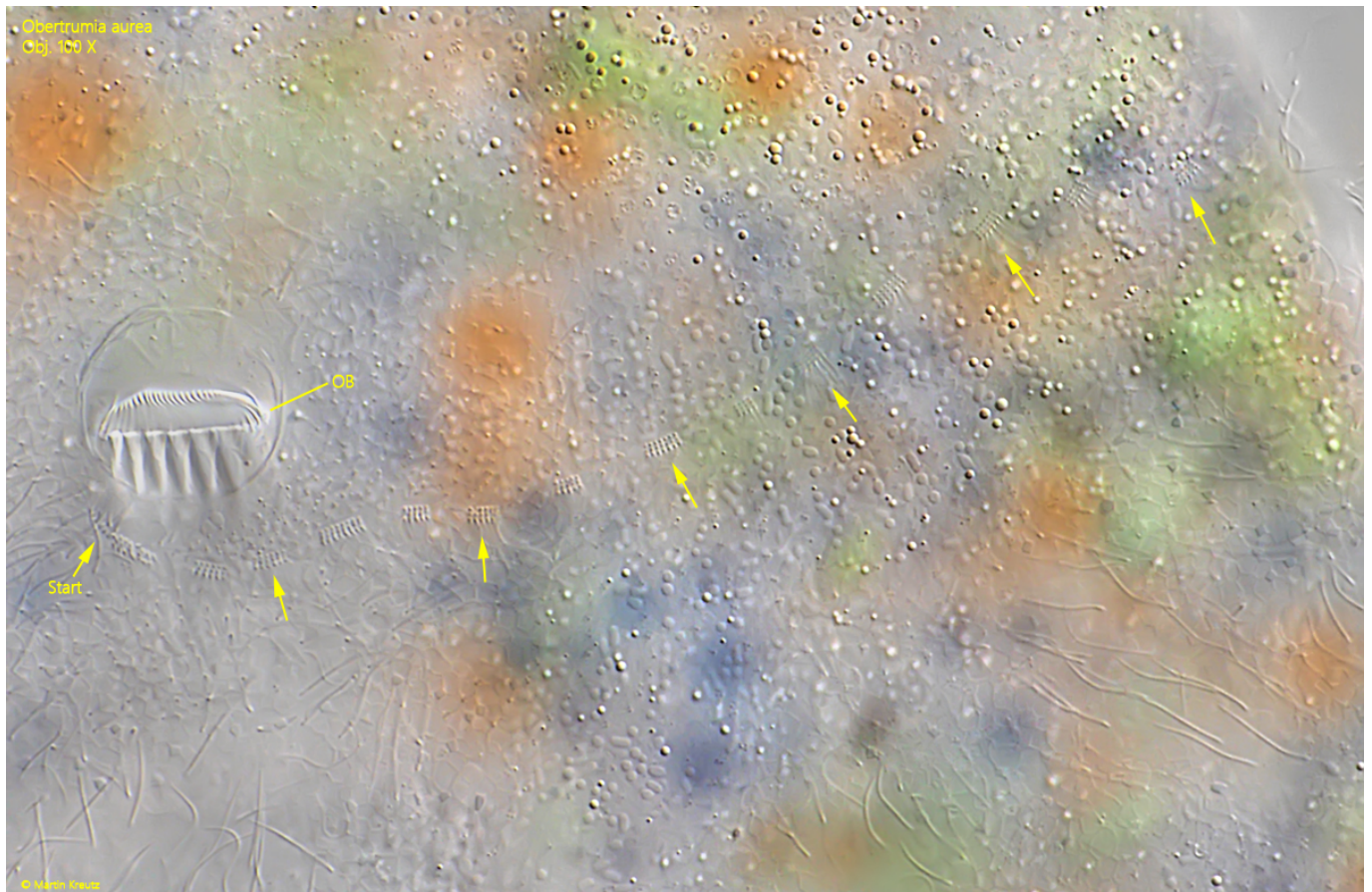


after Foissner et al.

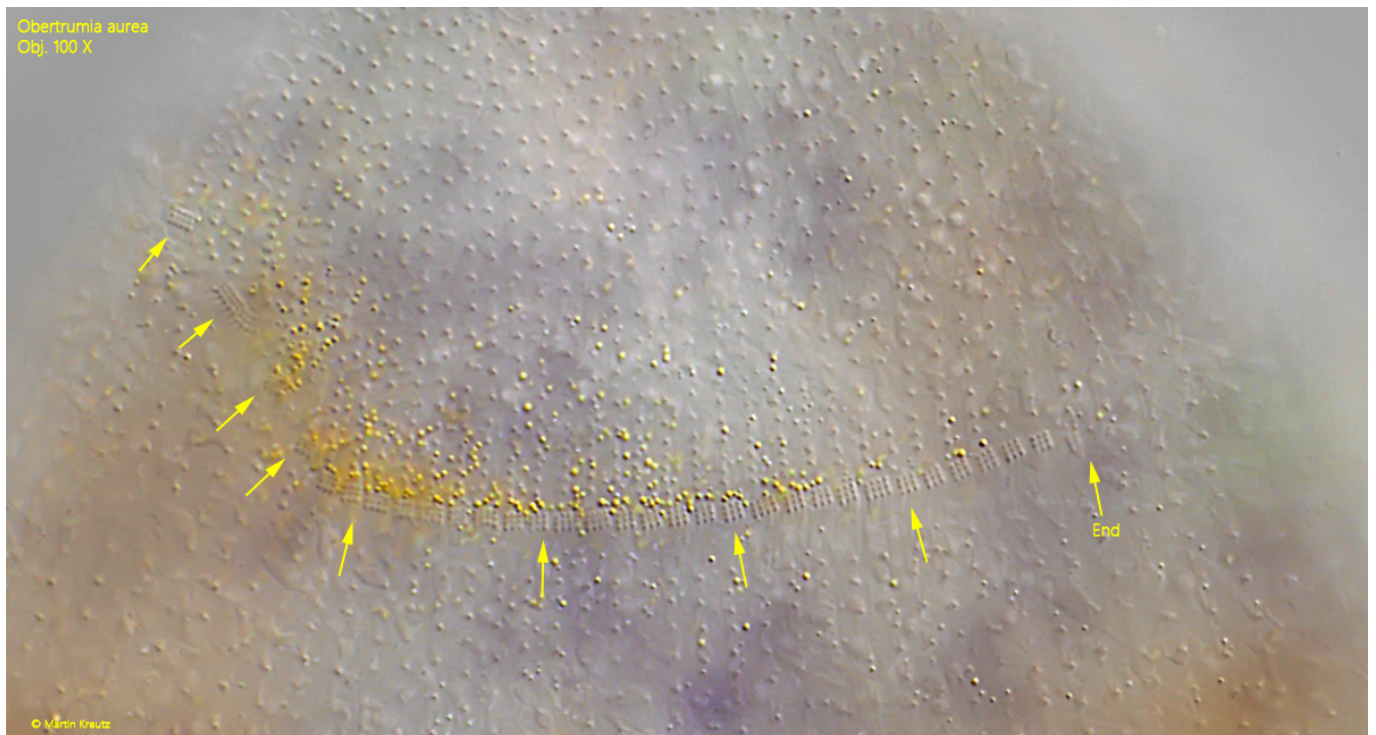
**Fig. 5:** The schematic shapes of the synhymenium in the various genera of nassulid ciliates according to Foissner et al.(2002).

Although the synhymenium is an important distinguishing feature in nassulides ciliates, it is difficult to recognize in living specimens. The best way to examine it in slightly squashed specimens is to adjust the focal plane on the basal bodies of the groups of cilia. The basal bodies are arranged very symmetrically in defined blocks in rows of three. In order to recognize the exact course of the synhymenium, both the ventral and the dorsal side must be examined (s. figs. 6 and 7).





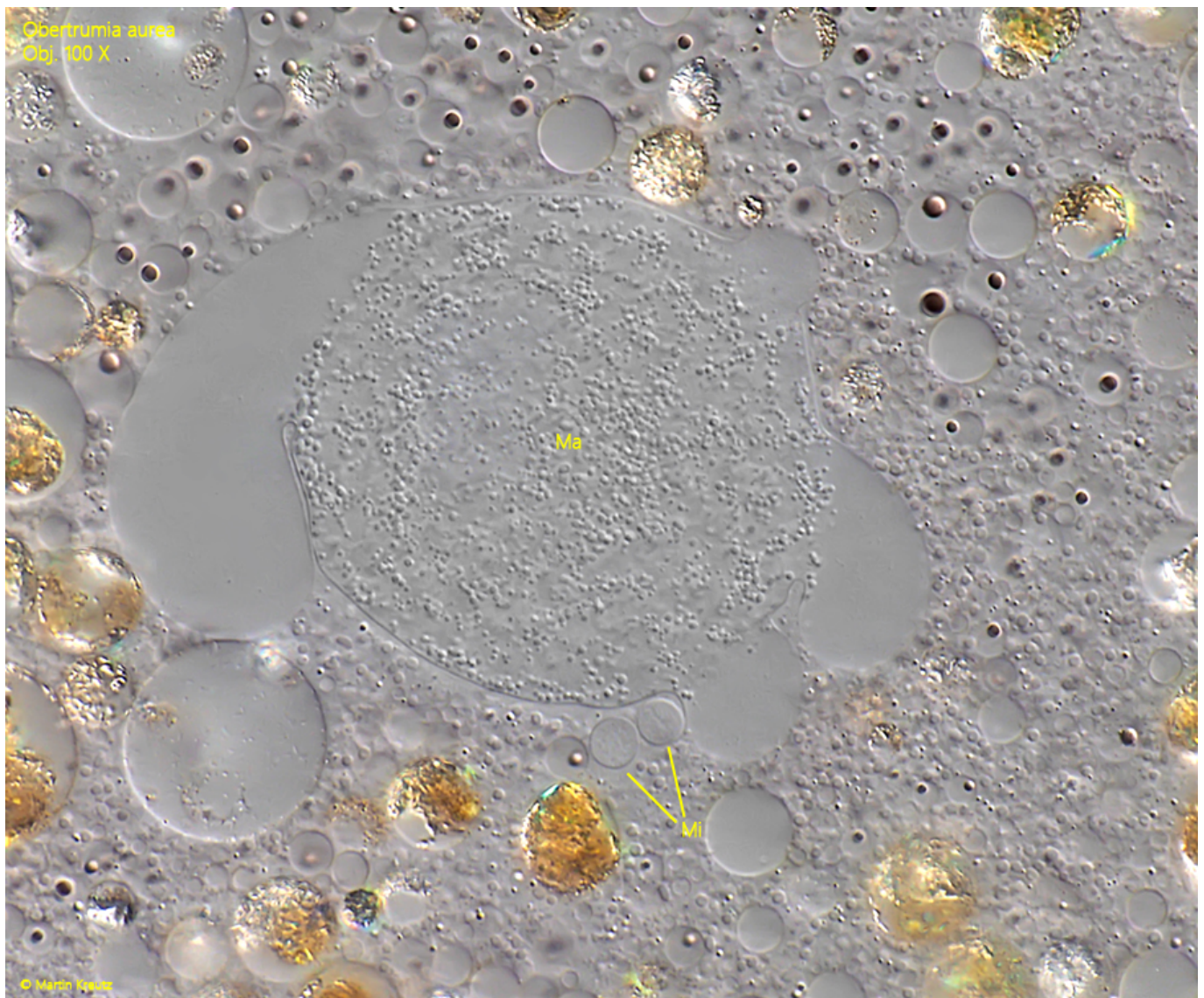
**Fig. 6:** *Obertrumia aurea*. Focal plane on the basal bodies of the synhymenium (arrows) on the ventral side. The synhymenium starts below the oral basket and is slightly S-shaped. Obj. 100 X.



**Fig. 7:** *Obertrumia aurea*. Focal plane on the basal bodies of the synhymenium

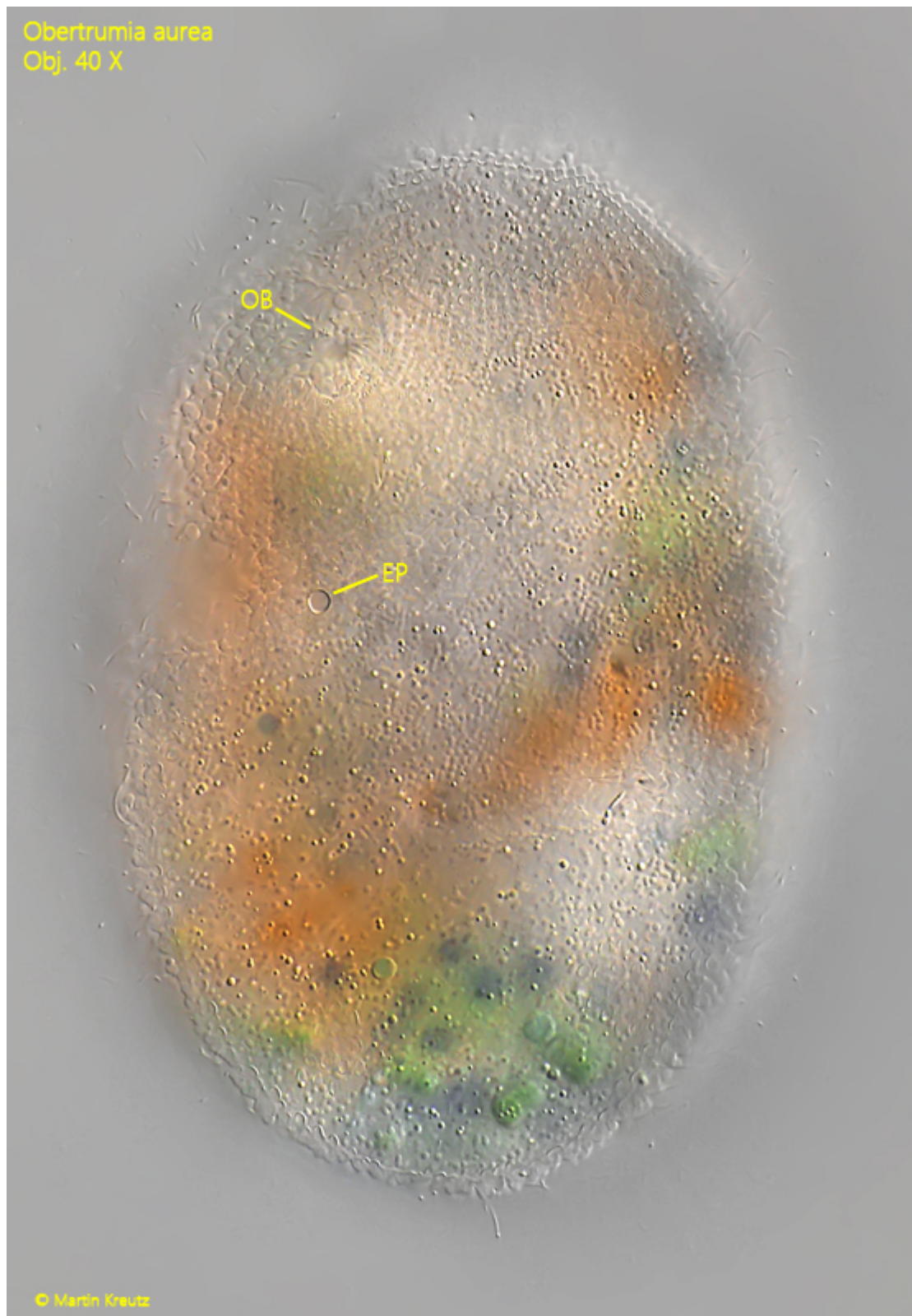


(arrows) on the dorsal side. The synhymenium (arrows) changes abruptly from an S-shape to a straight line and then ends. Obj. 100 X.



**Fig. 8:** *Obertrumia aurea*. The globular macronucleus (Ma) with two adjacent micronuclei (Mi) in a strongly squashed specimen. Obj. 100 X.





**Fig. 9:** *Obertrumia aurea*. The excretion pore (EP) of the contractile vacuole on the ventral side. OB = oral basket. Obj. 100 X.