

***Carchesium polypinum***

**(Linnaeus, 1758) Ehrenberg, 1830**

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

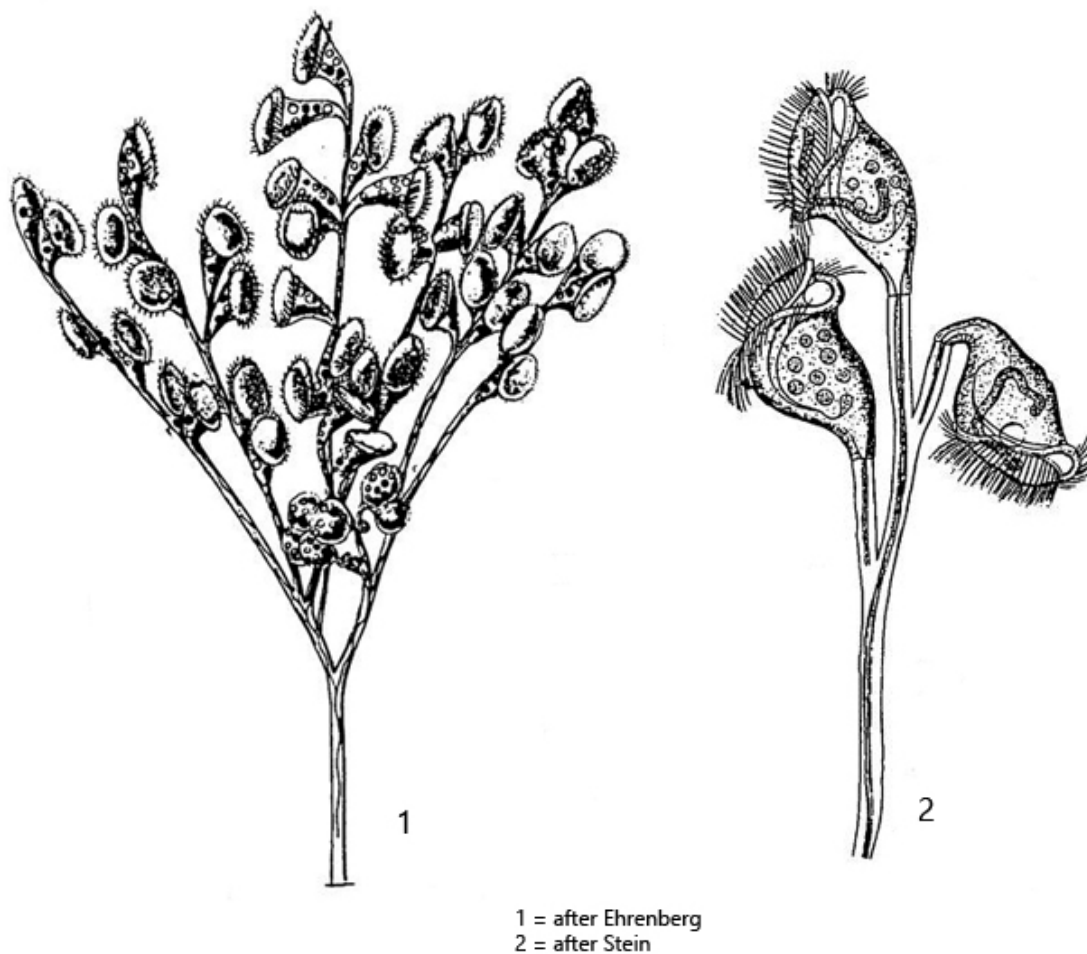
**Synonym:** n.a.

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

**Phylogenetic tree:** [Carchesium polypinum](#)

**Diagnosis:**

- zooids elongated bell-shaped, often inclined to the side
- length of zooids 80-140 µm
- zooids contract almost spherical
- macronucleus J-shaped in the longitudinal axis
- one micronucleus
- one contractile vacuole
- peristome collar 60-135 µm in diameter
- pellicle finely striated
- colonies tree-shaped with branched stalks, up to 2 mm high
- lower part of the colonies is an unbranched main stem
- stalks contract in tight helix
- myonemes in the branches are interrupted



### Carchesium polypinum

I find *Carchesium polypinum* mainly in old samples from the [Simmelried](#). The colonies of this peritrich ciliate are easy to recognize by the tree-like structure and the non-branched stalk. *Carchesium polypinum* can be easily distinguished from other colony-forming peritriche ciliates, whose peduncles also contract helically, by the interrupted myonemes at the branching points (s. figs. 3, 4 and 5). This interruption of myonemes causes zooids and also individual branches of colonies to contract independently. In the similar genus *Zoothamnium*, the myonemes are not interrupted, causing the entire colony to always contract synchronously. A distinguishing feature from *Vorticella* species is the stalk thickness. In *Vorticella*, the stalk is always  $< 10\ \mu\text{m}$  thick, whereas in *Carchesium polypinum* it is thicker than  $10\ \mu\text{m}$  (s. fig. 6). Comparable *Epistylis* species (e.g. [Epistylis procumbens](#)) do not have a central myoneme in the stalk and therefore cannot contract.

*Carchesium polypinum*  
Obj. 10 X



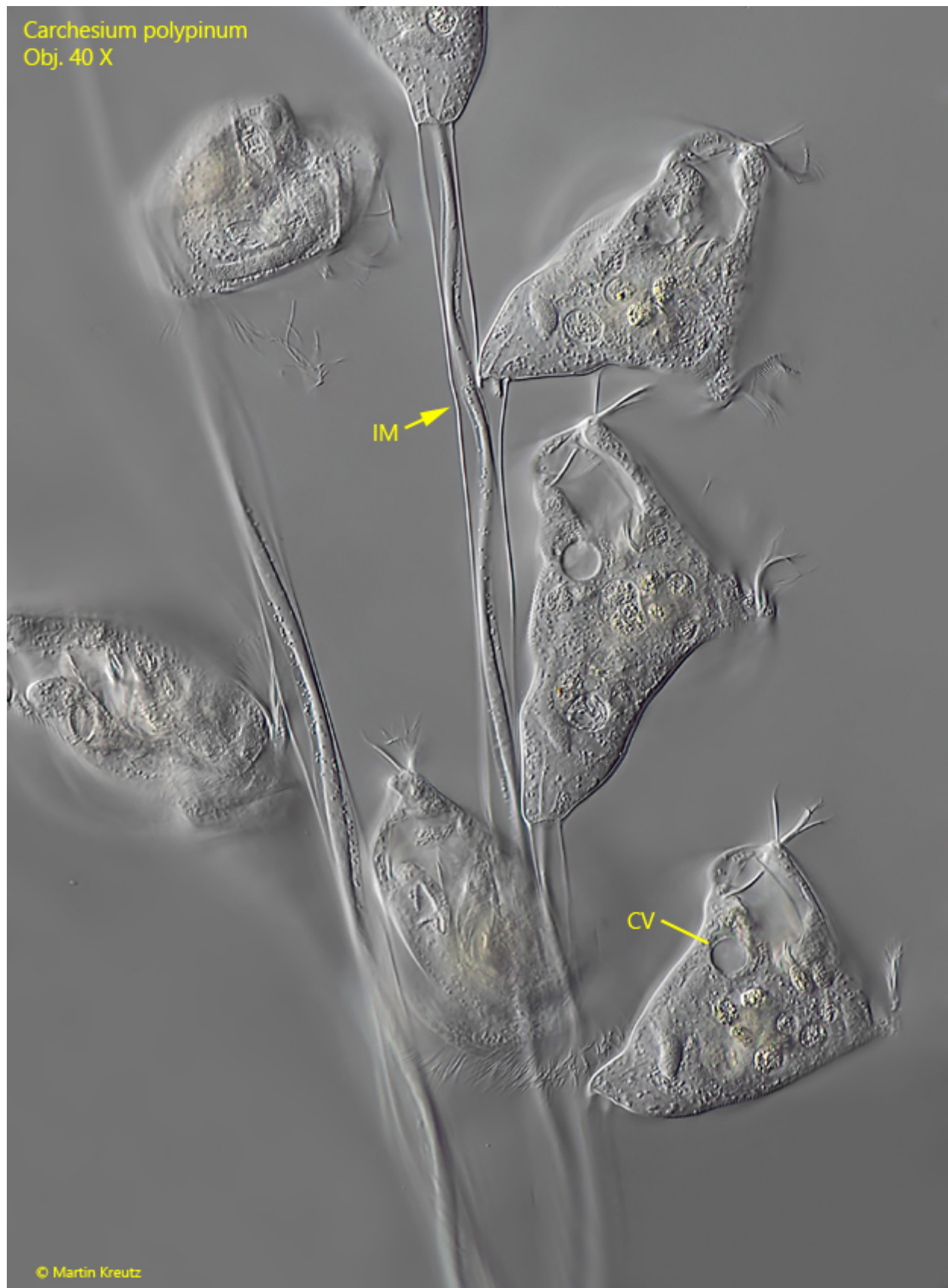
**Fig. 1:** *Carchesium polypinum*. Overview of a colony with a length of 1600 µm. Obj. 10 X.

*Carchesium polypinum*  
Obj. 20 X

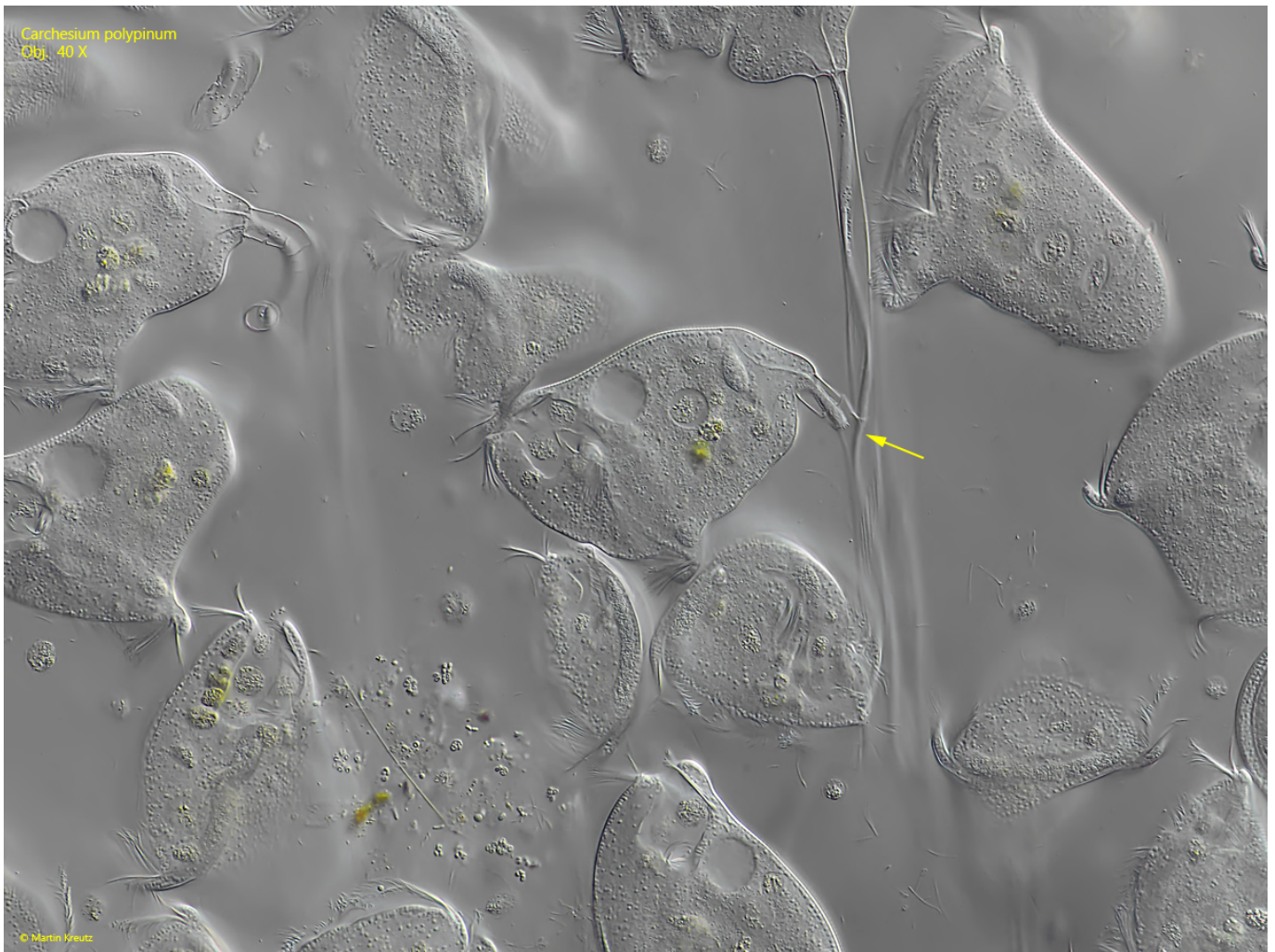


**Fig. 2:** *Carchesium polypinum*. Detail of the colony shown in fig. 1. Obj. 20 X.





**Fig. 3:** *Carchesium polypinum*. L = 90-106  $\mu\text{m}$  (of zooids). The zooids of the colony shown in fig. 1. Note the interrupted myoneme (IM) at the branch of the stalk. Obj. 40 X.

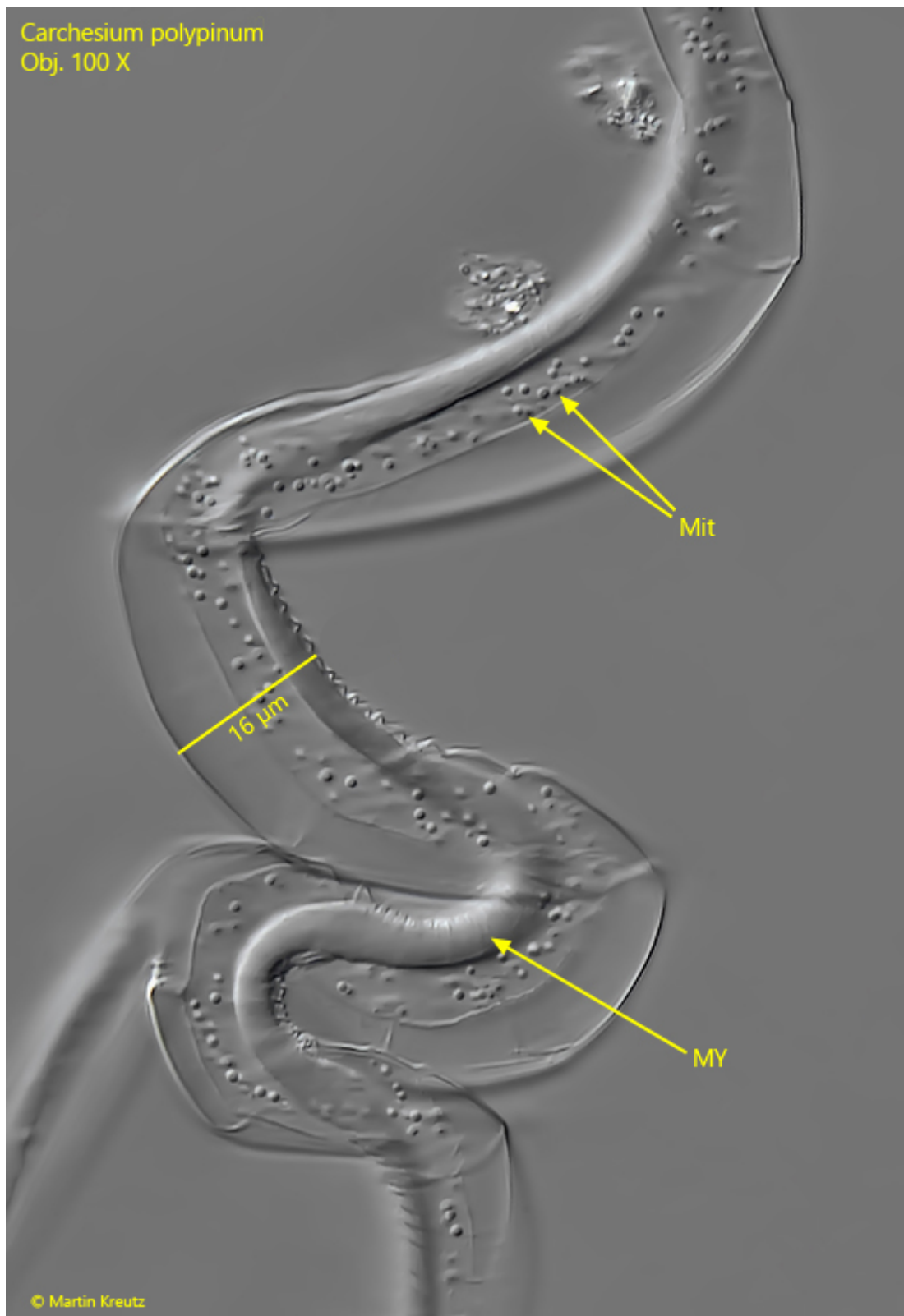


**Fig. 4:** *Carchesium polypinum*. The interrupted myoneme (arrow) at the branch of the stalk in a slightly squashed colony. Obj. 40 X.



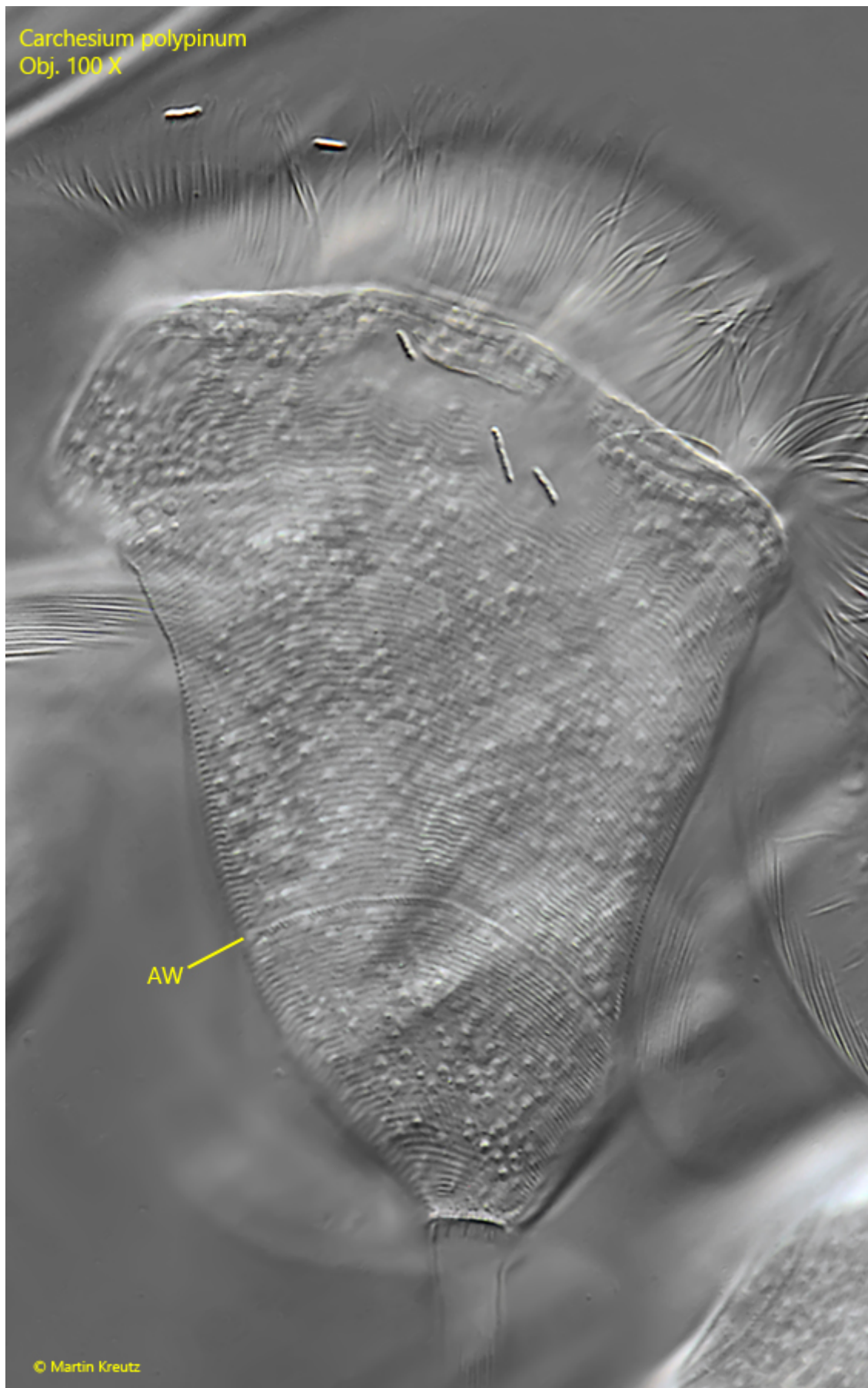
**Fig. 5:** *Carchesium polypinum*. The interruption of the myoneme (IM) in detail. My = myoneme of the stalk. Obj. 40 X.





**Fig. 6:** *Carchesium polypinum*. The spiralized stalk with the central myoneme (MY). The myoneme is surrounded by numerous mitochondria (Mit). Obj. 100 X.





**Fig. 7:** *Carchesium polypinum*. The fine sriation of the pellicle. In this specimen, there are 15 lines per 10  $\mu$ m. AW = aboral ciliary wreath. Obj. 100 X.



**Fig. 8:** *Carchesium polypinum*. The J-shaped macronucleus (Ma) and the micronucleus (Mi) in a strongly squashed specimen. CV = contractile vacuole. Obj. 100 X.