Wallackia cf. *schiffmanni* Foissner, 1976

Most likely ID: n.a.

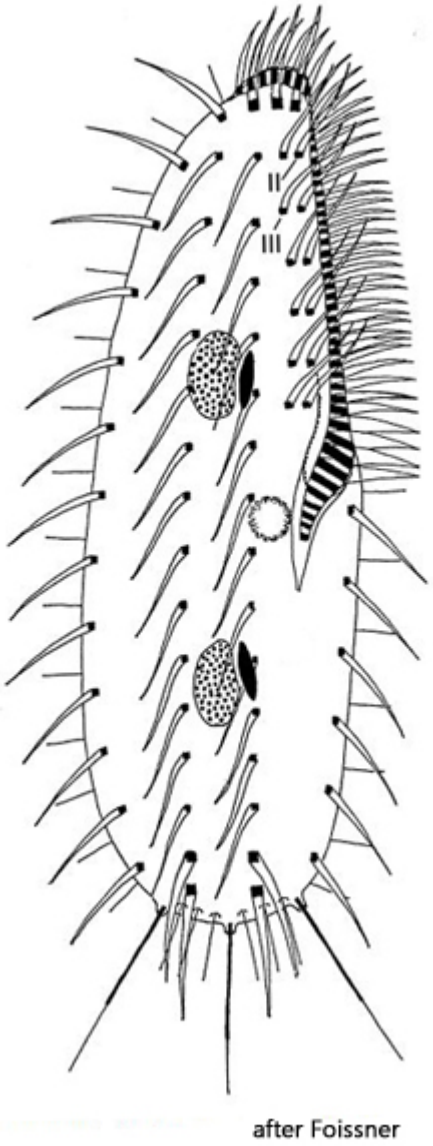
Synonym: n.a.

Sampling location: Simmelried

Phylogenetic tree: *Wallackia schiffmanni*

Diagnosis:

- body elliptical, posterior broadly rounded
- length 85–100 µm
- adoral zone reach mid-body
- 2 macronuclei with each one adjacent micronucleus
- cortical granules rod-shaped
- 2 rows of ventral cirri
- left and right marginal rows of cirri
- 3 caudal cirri, widely spaced



Wallackia schiffmanni

So far, I have only found 3 specimens of *Wallackia* cf. *schiffmanni*. The first two specimens were found in September 2008 in Simmelried. The third specimen was found only 14 years later, in July 2022, also in Simmelried.

Within the genus *Wallackia*, only three species have been recorded so far. These hypotrich ciliates share the characteristic that they all have elongated caudal cirri and two parallel longitudinal rows of ventral cirri. The adoral zone extends to the middle of the body in all three species, and the contractile vacuole is located on the right side, emptying directly into the cytopharynx. There are always two macronuclei and two micronuclei present.

The species *Wallackia elegans* has a distinctly tapered posterior end and is only

about 70 µm long. I therefore excluded this species, as my specimens were between 84–110 µm long and had a broadly rounded posterior end. This leaves the two similar species *Wallackia schiffmanni* and *Wallackia bujoreani*. The latter species is said to live terrestrially and also only reaches 70 µm in length. Thus, *Wallackia schiffmanni* remains, for which a length of 85–100 µm is given (Foissner, 1976) and which also occurs limnetically.

However, my findings differ from *Wallackia schiffmanni* particularly in the length and arrangement of the caudal cirri compared to Foissner's original description. According to that, there should be only 3 caudal cirri, which are widely spaced and arise from short, tubular extensions, as Foissner drew them (s. drawing above). A specimen of Wallackia schiffmanni found by Bruce Taylor (s. link below) clearly shows the three spread caudal cirri. In contrast, the specimens of my population had at least 4 caudal cirri, which were between 25–52 µm long and soft and flexible. They also did not arise from tubular extensions. Additionally, *Wallackia schiffmanni* is supposed to have a fringe of about 3 µm long, rod-shaped proto-extrusomes, which I could not detect in my specimens either.

As an alternative, Wallackia bujoreani remains, which Berger (2011) as well as Hemberger (1982) believe might be synonymous with *Wallackia schiffmanni* and possibly not only terrestrial. In Wallackia bujoreani, the caudal cirri are indeed closer together, but there are said to be only three.

Due to the length of the specimens in my population and the limnic habitat, I therefore consider Wallackia schiffmanni most likely; however, because of the deviations from the original descriptions described above, I would like to designate the species as *Wallackia* cf. *schiffmanni*.

More images and information on *Wallackia schiffmanni:* Bruce Taylor-iNaturalist-*Wallackia schiffmanni*



Fig. 1: *Wallackia* cf. *schiffmanni*. L = 92 µm. A freely swimming specimen from dorsal found in September 2008 in the Simmelried. The caudal cirri (CC) are 52 µm long. Obj. 60 X.

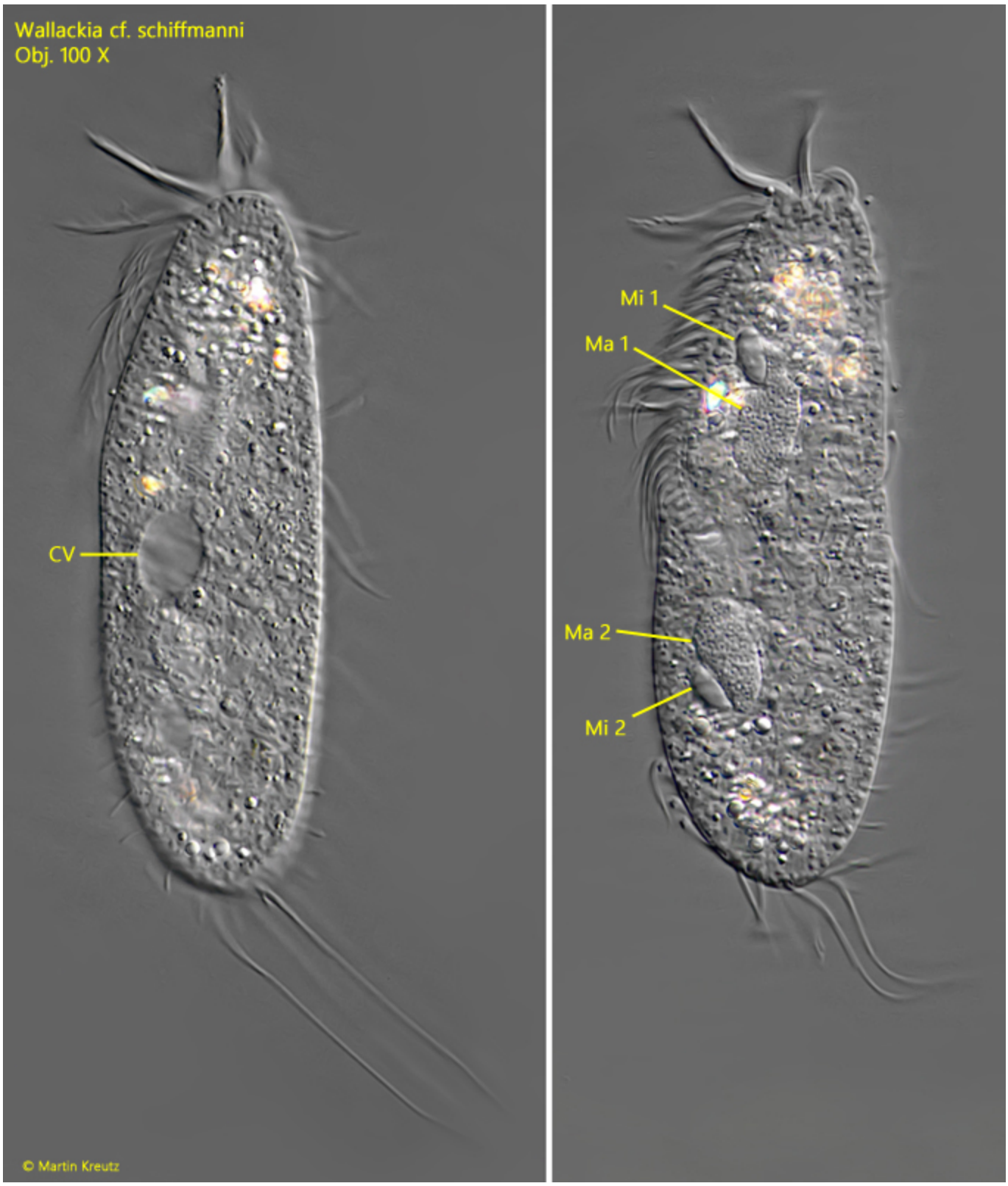


Fig. 2 a-b: *Wallackia* cf. *schiffmanni*. L = 92 µm. The slightly squashed specimen as shown in fig. 1 from dorsal. CV = contractile vacuole, Ma 1 + 2 = macronuclei, Mi 1+2 = micronuclei. Obj. 60 X.

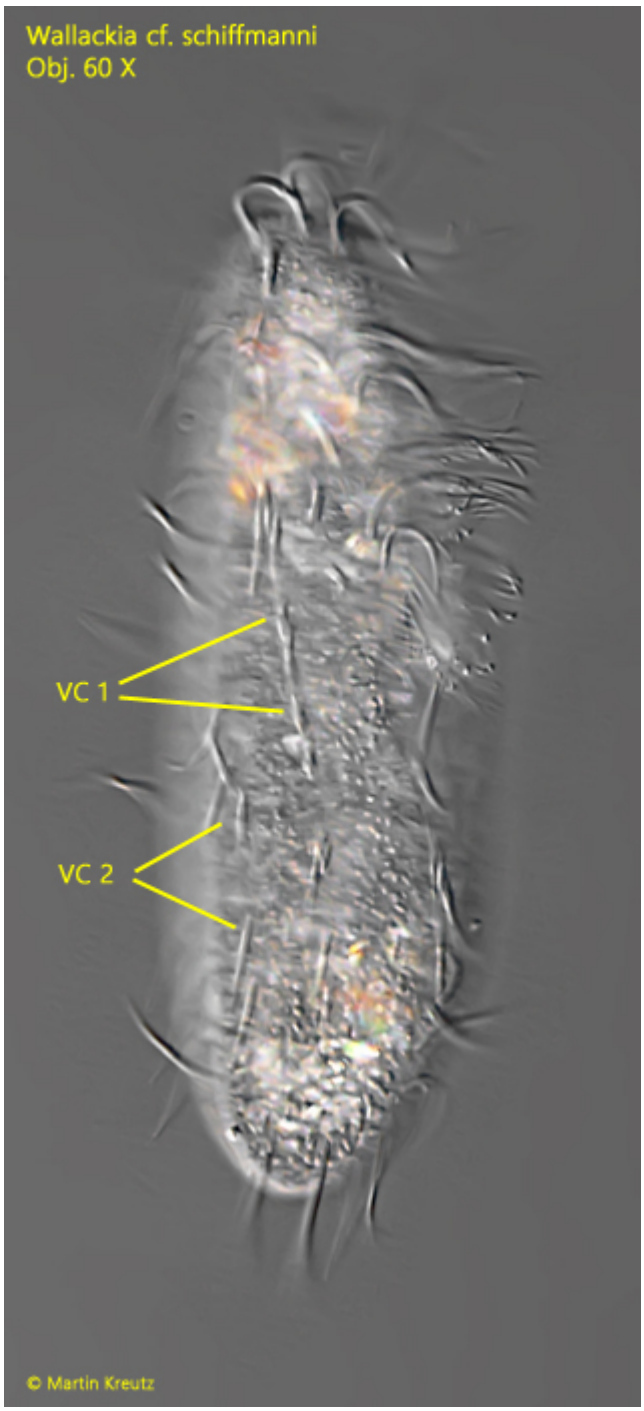


Fig. 3: *Wallackia* cf. *schiffmanni*. L = 110 µm. A second specimen found in September 2008 in the Simmelried from ventral. Note the two rows of ventral cirris (VC 1, VC 2). Obj. 60 X.

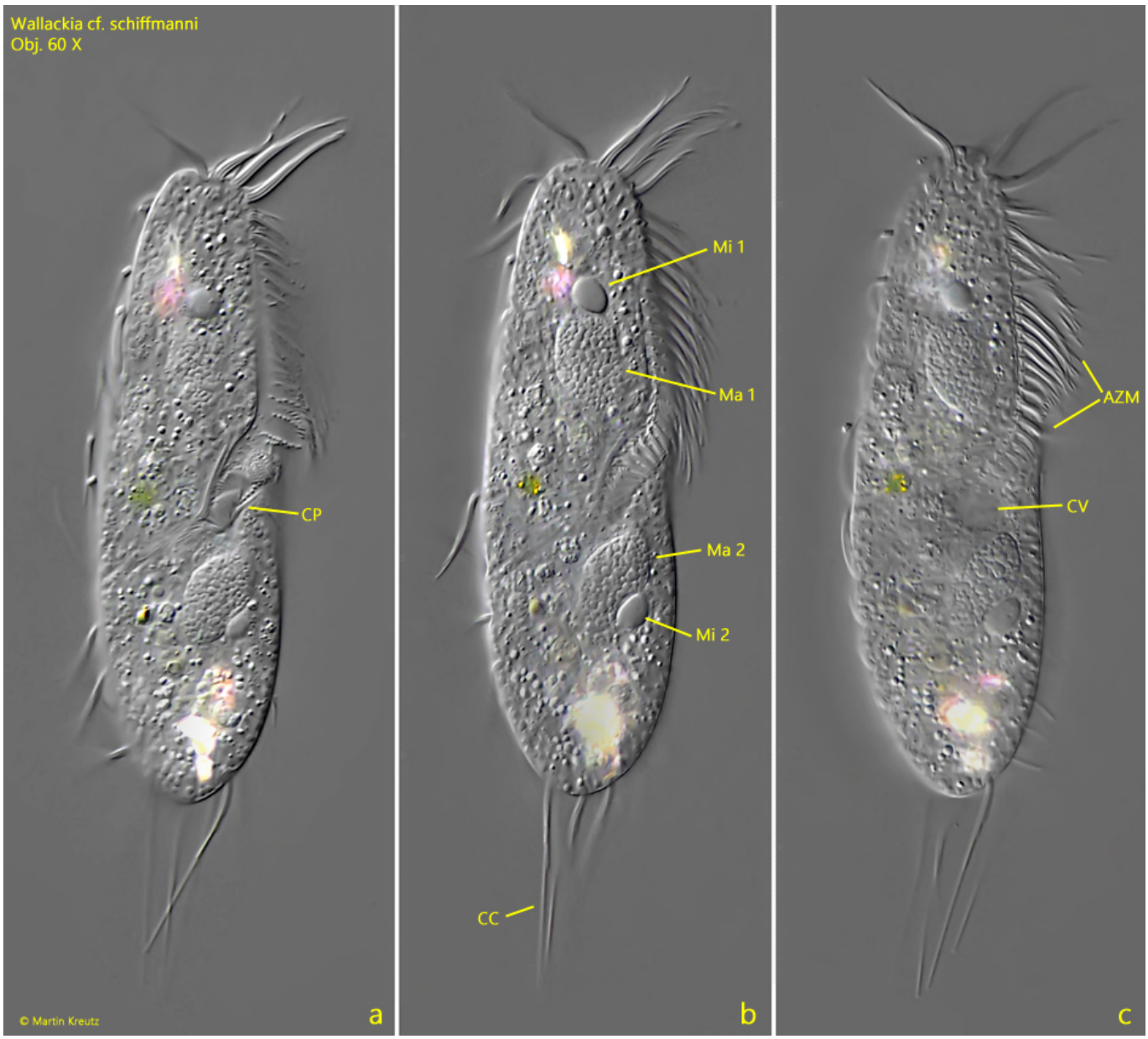


Fig. 4 a-c: *Wallackia* cf. *schiffmanni*. L = 84 µm. A freely swimming specimen from ventral found in July 2022 in the Simmelried. The contractile vacuole (CV) is located near the cytopharynx (CP) The caudal cirri (CC) have a length of 25 µm. AZM = adoral zone of membranelles, Ma 1+2 = macronuclei, Mi 1+2 = micronuclei. Obj. 60 X.

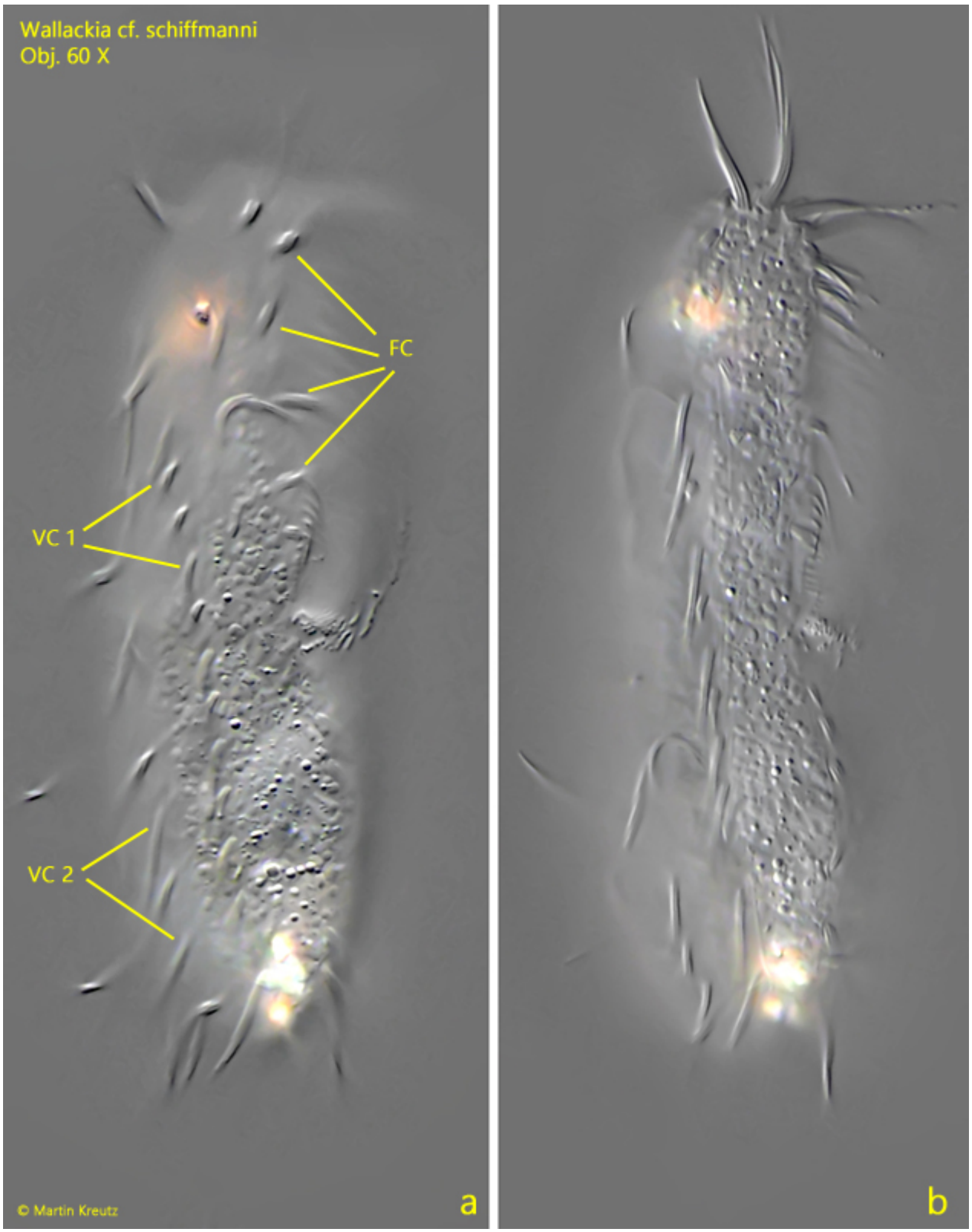


Fig. 5 a-b: *Wallackia* cf. *schiffmanni*. L = 84 µm. Focal plane on the ventral cirri of the specimen shown in fig. 4 a-c. Note the two longitudinal rows of ventral cirri (VC 1, VC 2) and the frontoventral cirri (FC) to the right of the oral apparatus. Obj. 60 X.