Ichthyophthirius multifiliis Fouquet, 1876

Most likely ID: n.a.

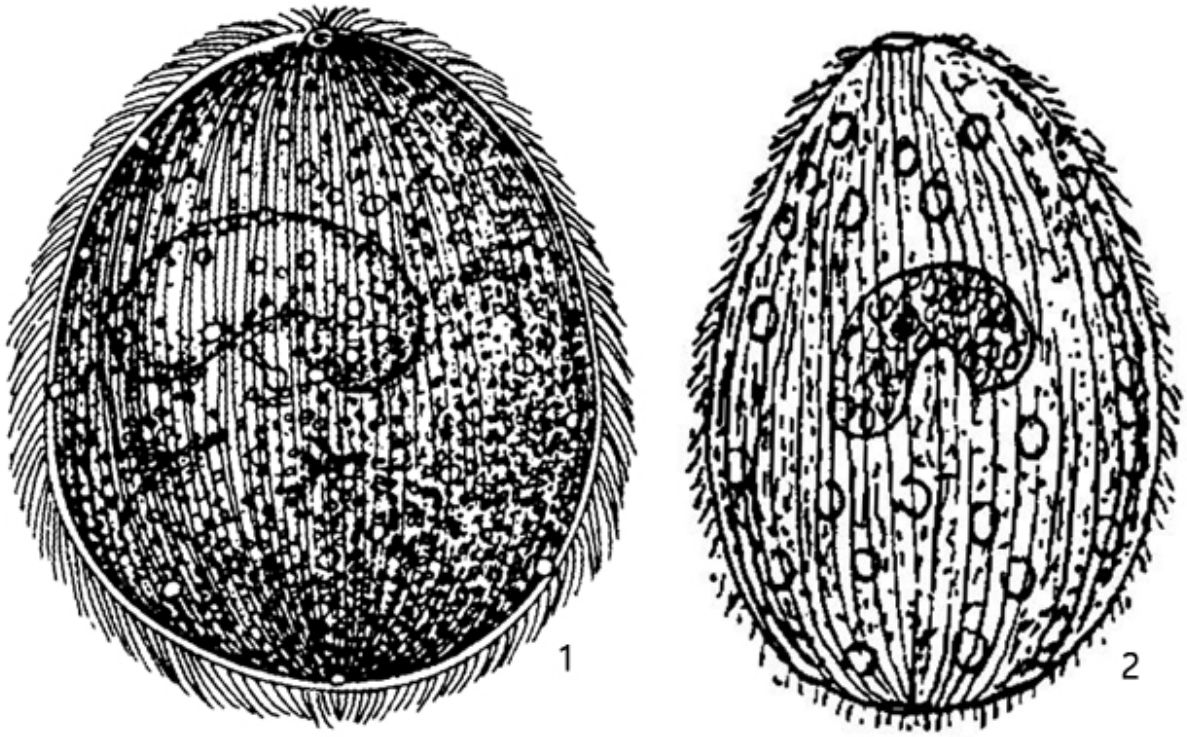
Synonym: *Ichthyophthirius multifilis*

Sampling location: Simmelried

Phylogenetic tree: *Ichthyophthirius multifiliis*

Diagnosis:

- body brodly ovoid
- length up to 700 µm
- apical oral apparatus bundle of short rods
- macronucleus vermiform or horseshoe-shaped
- numerous contractile vacuoles scattered beneath pellicle
- very dense ciliature with tight longitudinal rows
- fish parasite (white spot disease)
- complex life cycle (phoront, trophont, therodont, tomit)



Ichthyophthirius multifiliis

So far I have only found a single specimen of *Ichthyophthirius multifiliis* in April 2020 in the Simmelried. This ciliate is more or less egg-shaped and very large (up to 700 µm). *Ichthyophthirius multifiliis* is feared by aquarists and fish farmers because it causes the “white spot disease”. *Ichthyophthirius multifiliis* penetrates the fish skin and begins to grow strongly there as a trophont. These trophonts can then be seen as white dots with the naked eye. The adult trophonts detach from the fish skin, divide and can release thousands of daughter cells (tomites), which infest new hosts.

My specimen of *Ichthyophthirius multifiliis* was slightly yellowish in color and had a vermiform macronucleus, which according to Kahl (1935) can also be horseshoe-shaped. Micronuclei are not described in the literature and I could not recognize any. They may be scattered in the cytoplasm. Characteristic is the lack of a mouth opening. Instead, there is an accumulation of short rods in the apical area under the pellicle. Many contractile vacuoles with 1–3 excretory pores are distributed over the whole body. The ciliature is very dense and the longitudinal rows of cilia are very close together. I could not recognize any extrusomes.



Fig. 1: *Ichthyophthirius multifiliis.* L = 500 µm. A slightly squashed specimen. Note the numerous contractile vacuoles (CV) scattered over the body. The cytoplasm is colored slighty yellowish. OA = oral apparatus. Obj. 20 X.

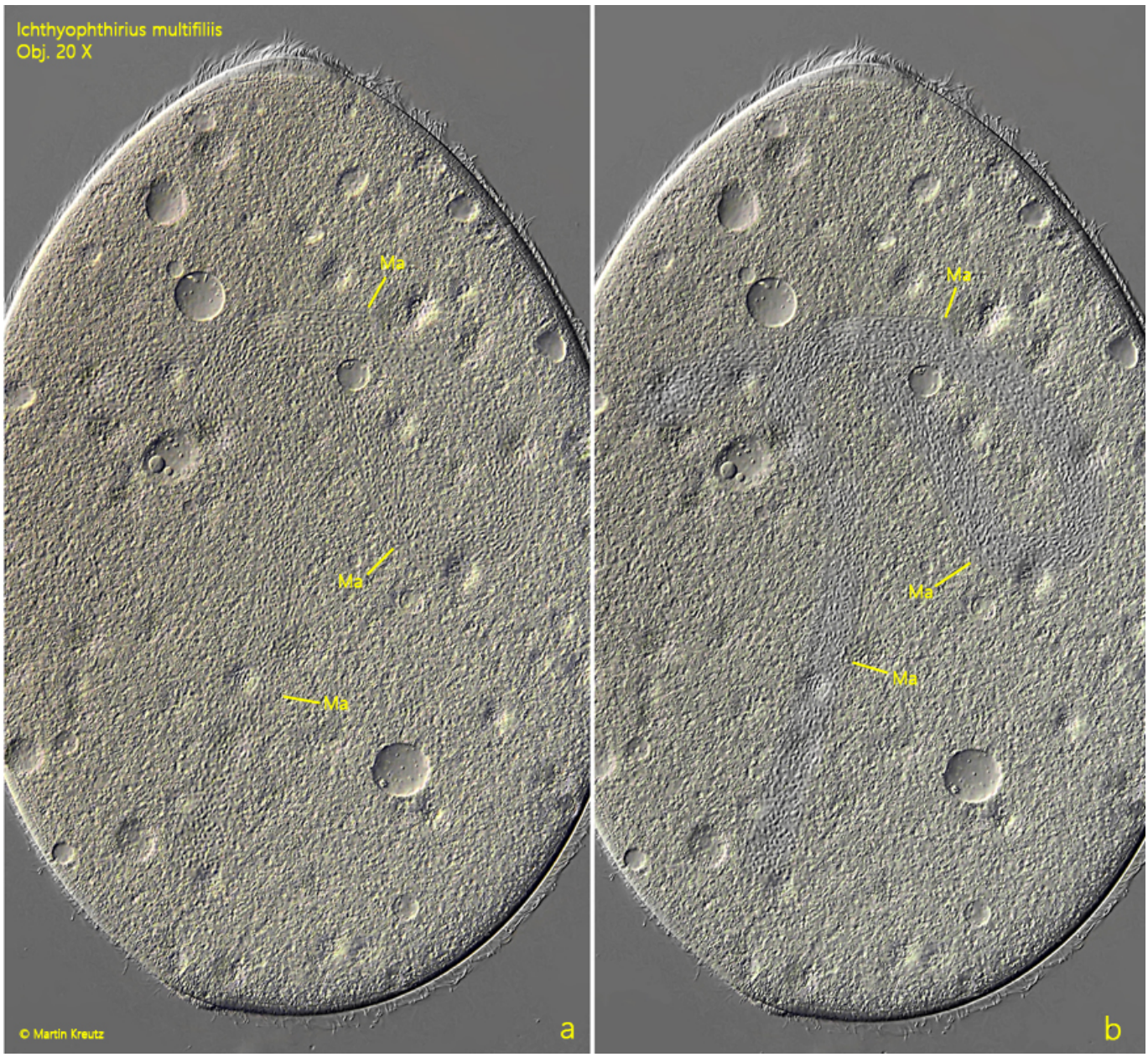


Fig. 2 a-b: *Ichthyophthirius multifiliis.* L = 500 µm. The macronucleus (Ma) of the same specimen as shown in fig. 1 is vermiform and hard to see. In the right image (b), the macronucleus has been decolored for better visibility. Obj. 20 X.

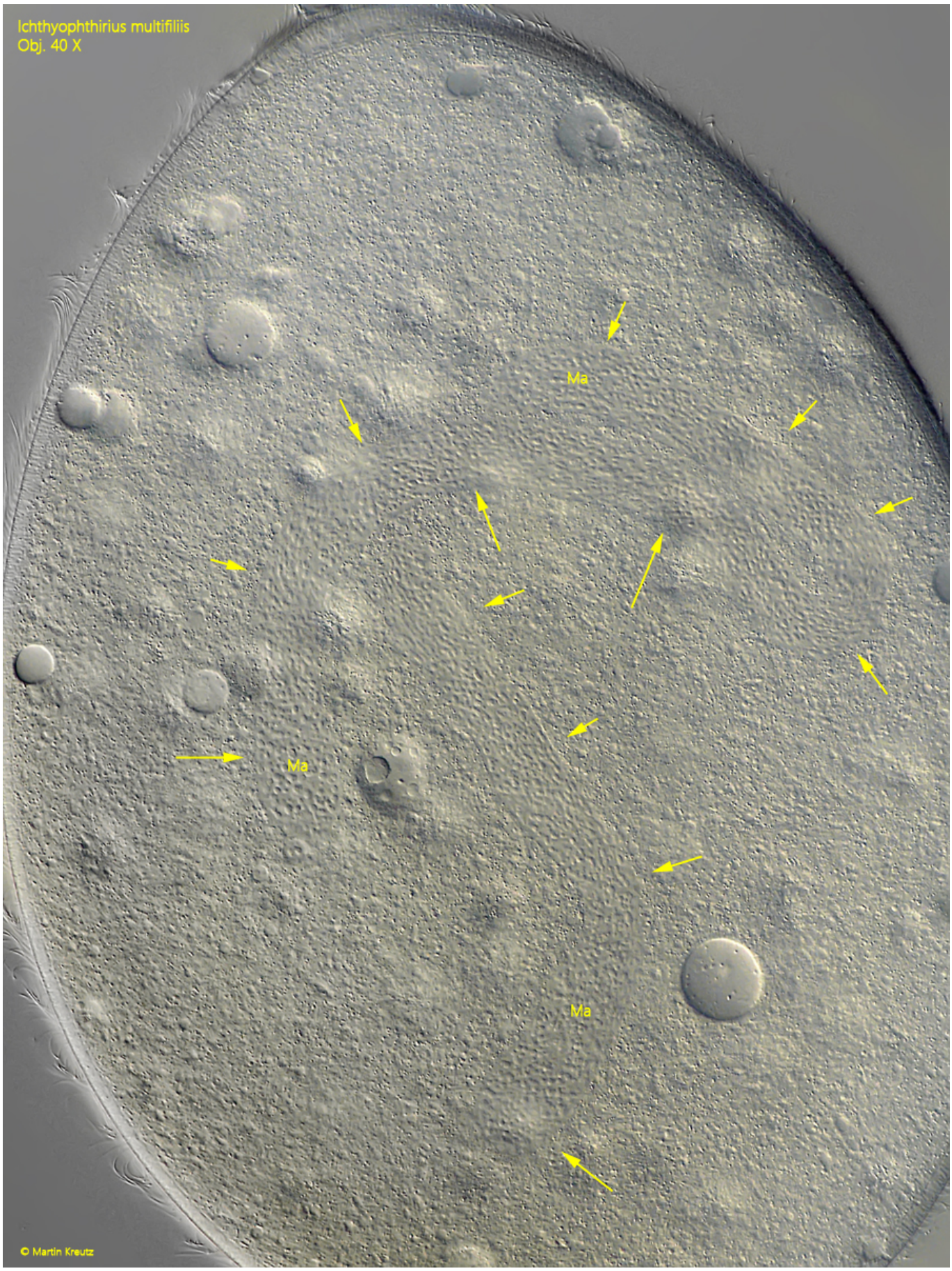


Fig. 3: *Ichthyophthirius multifiliis.* The vermiform macronucleus (Ma, arrows) at higher magnification. Obj. 40 X.

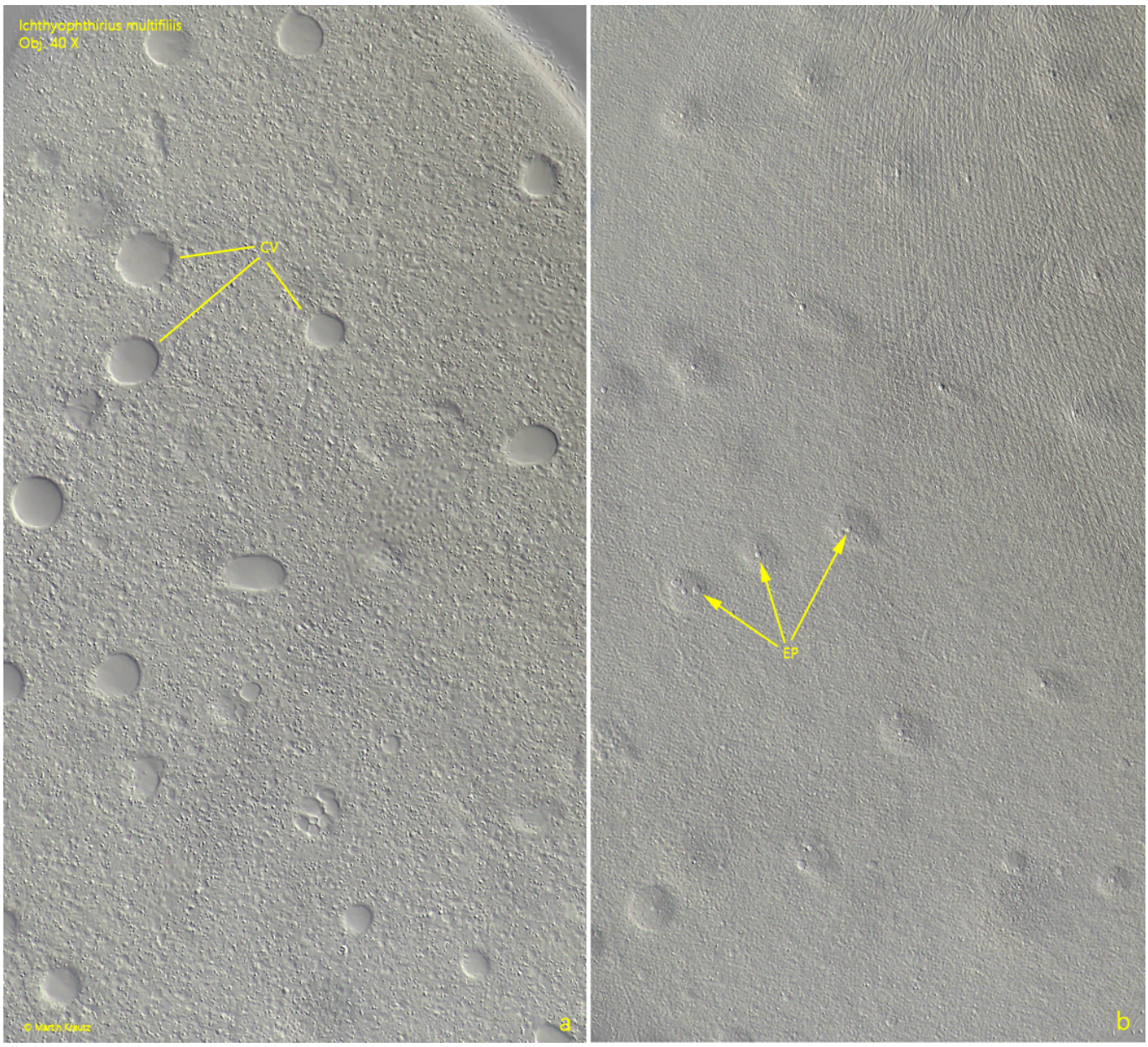


Fig. 4 a-b: *Ichthyophthirius multifiliis.* Focal plane on the contractile vacuoles (CV) beneath the pellicle (a) and on the excretions pores (EP) of the contractile vacuoles. Obj. 40 X.