Tetmemena pustulata

(Müller, 1786) Eigner, 1999

Most likely ID: n.a.

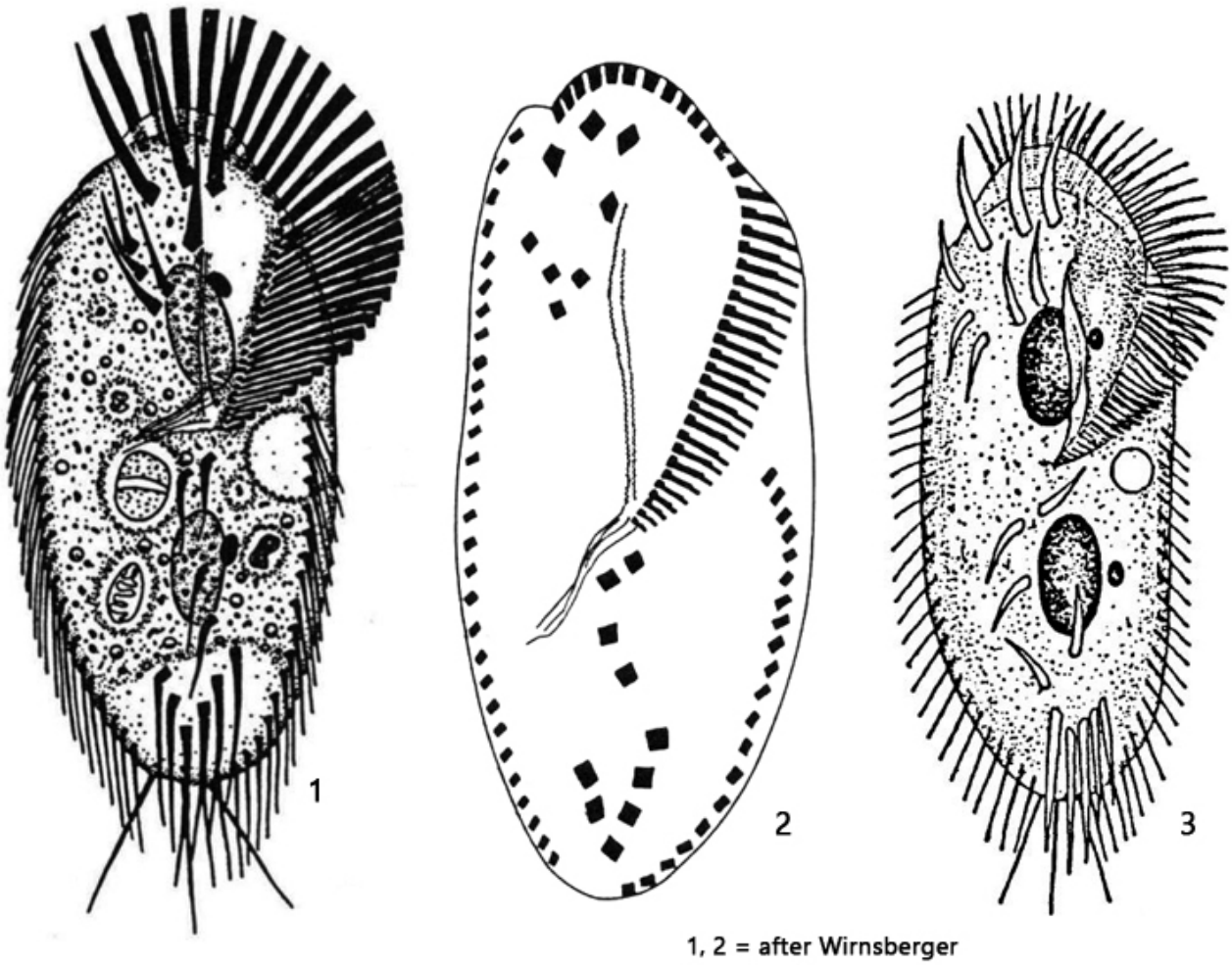
Synonym: *Stylonychia pustulata*, *Stylonychia pustulatus*

Sampling location: Ulmisried, Purren pond, Bussenried, Mainau pond, Mühlweiher Litzerstetten, Simmelried

Phylogenetic tree: n.a.

Diagnosis:

- body broadly elliptical, rigid, posterior end more narrowly rounded
- length 50–200 µm
- two macronuclei with one adjacent micronucleus each
- contactile vacuole on left side on level of mouth
- adoral zone reaches mid body
- three frontal cirri
- one buccal cirrus
- four fronto-ventral cirri
- three postoral ventral cirri
- two ventral cirri
- five transverse cirri
- three distinct caudal cirri
- dorsal 6 rows of short bristles



Tetmemena pustulata

The well known hypotriche ciliate *Stylonychia pustulata* was transferred into the new genus *Tetmemena* by Eigner (1999) on the basis of genetic analyses. *Tetmemena pustulata* is very common and adaptable to environmental conditions. It is found in practically all of my sampling sites. It likes to settle on the floating cover glass and is then easy to observe.

The exact identification of hypotriche ciliates using light microscopy alone is difficult, even with very common species. It is therefore necessary to closely examine the nuclear apparatus, the position of the contractile vacuole and especially the ventral ciliature. In the case of *Tetmemena pustulata*, two macronuclei are present, each with an attached micronucleus (s. fig. 6 b). The contractile vacuole is located on the left side, approximately in the middle of the body (s. fig. 6 b). The 4 fronto-ventral cirri are particularly important in the ventral ciliature. In *Tetmemena pustulata* they form a V-shaped arrangement (s. fig. 5). In the very similar species *Tetmemena vorax*, the right cirrus of the fronto-ventral cirri is clearly separated from the straight row of the three left cirri. On the dorsal side of *Tetmemena pustulata* the ciliation is strongly reduced to 6 rows of short, bristle-

shaped cilia (s. fig. 6 a).

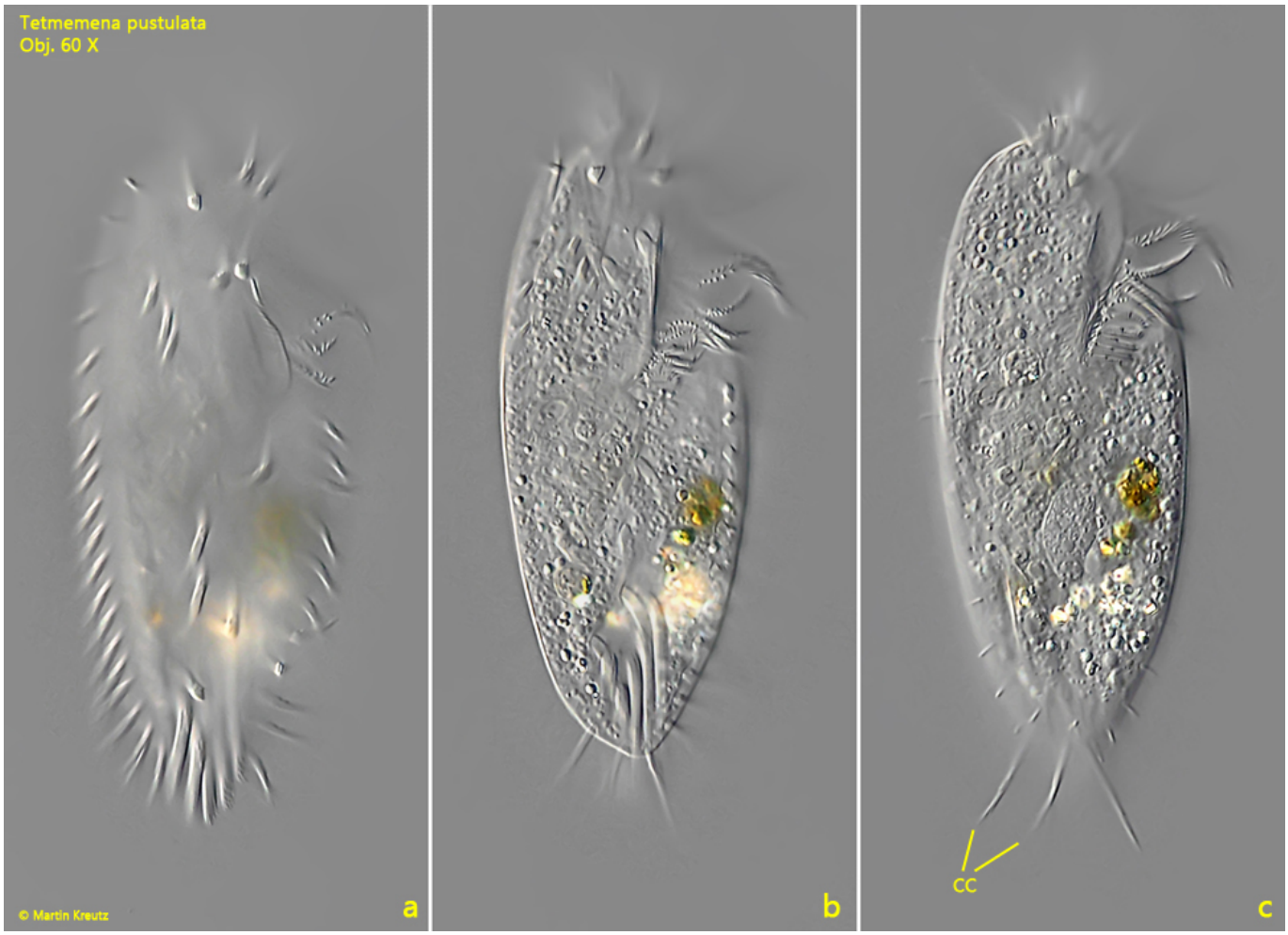


Fig. 1 a-c: *Tetmemena pustulata*. L = 86 µm. A freely swimming specimen from ventral. Note the three caudal cirri (CC). Obj. 60 X.

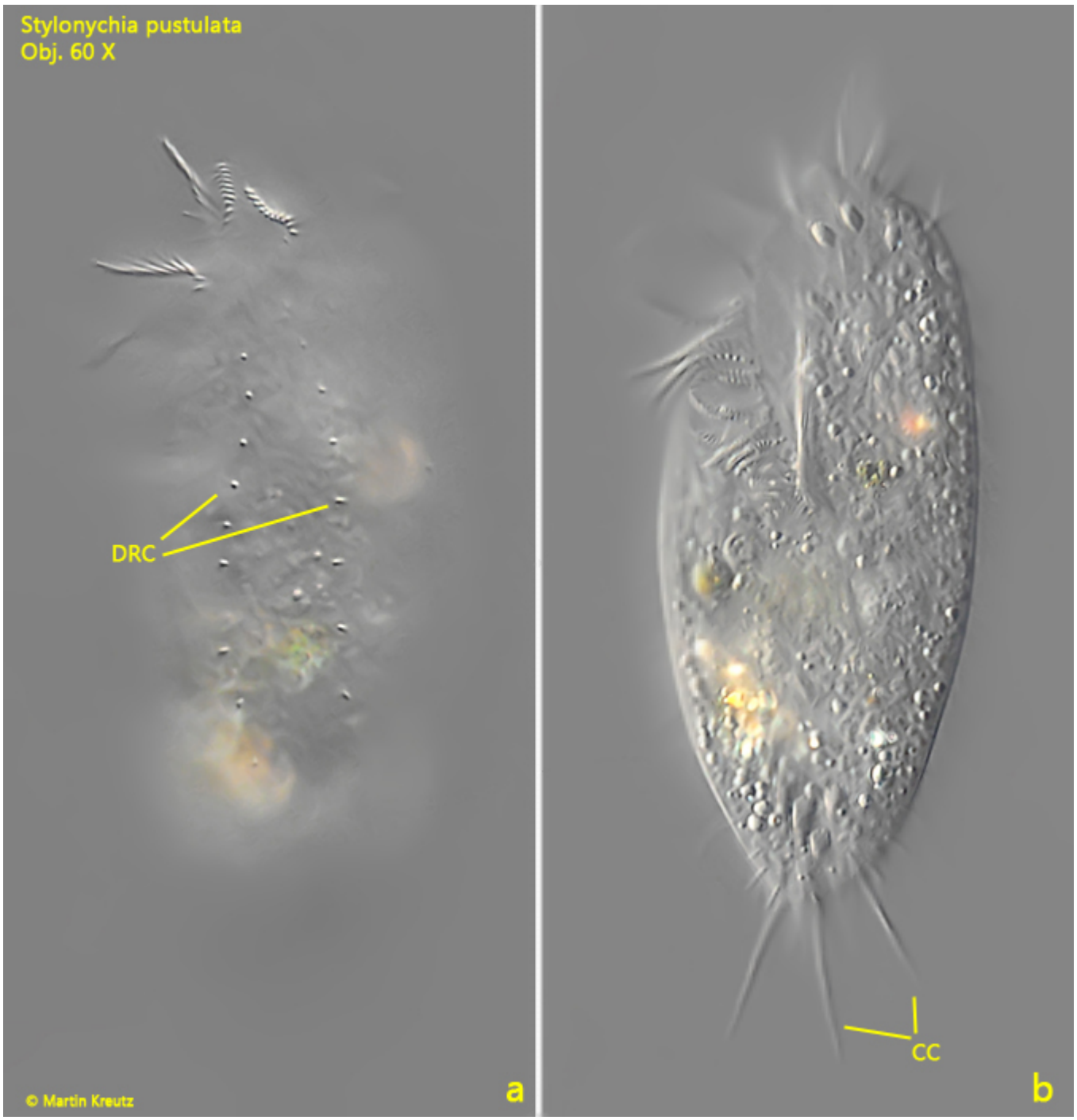


Fig. 2 a-b: *Tetmemena pustulata*. L = 86 µm. The same specimen as shown in fig. 1 a-c from dorsal. Note the rows of short dorsal cilia (DRC). CC = caudal cirri. Obj. 60 X.

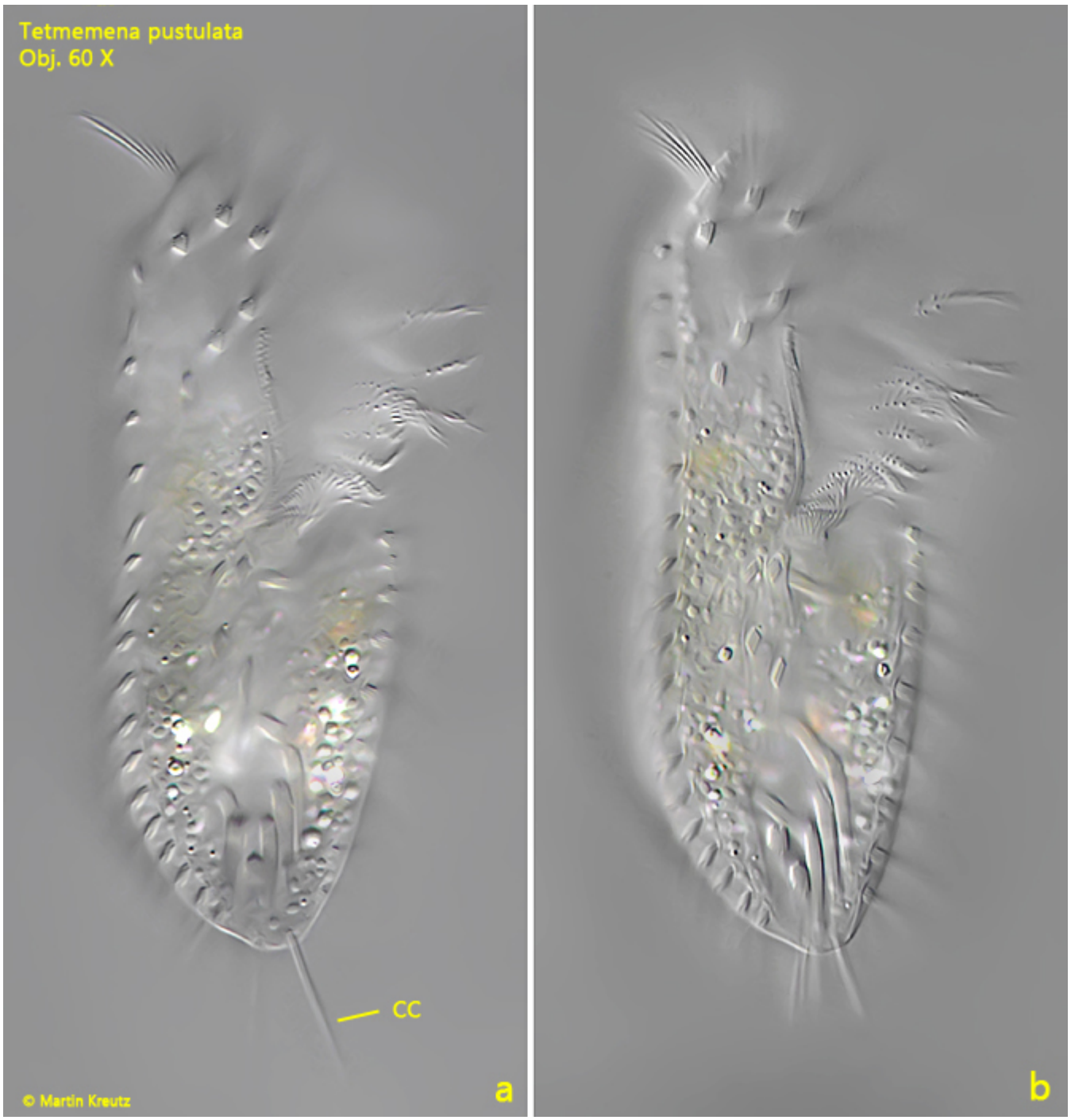


Fig. 3 a-b: *Tetmemena pustulata*. L = 140 µm. A second freely swimming specimen from ventral. CC = caudal cirri. Obj. 60 X.

Fig. 4 a-c: *Tetmemena pustulata*. L = 144 µm. A slightly squashed specimen from ventral. LMC = left marginal cirri, PVC = post-ventral cirri, RMC = right marginal cirri. Obj. 60 X.

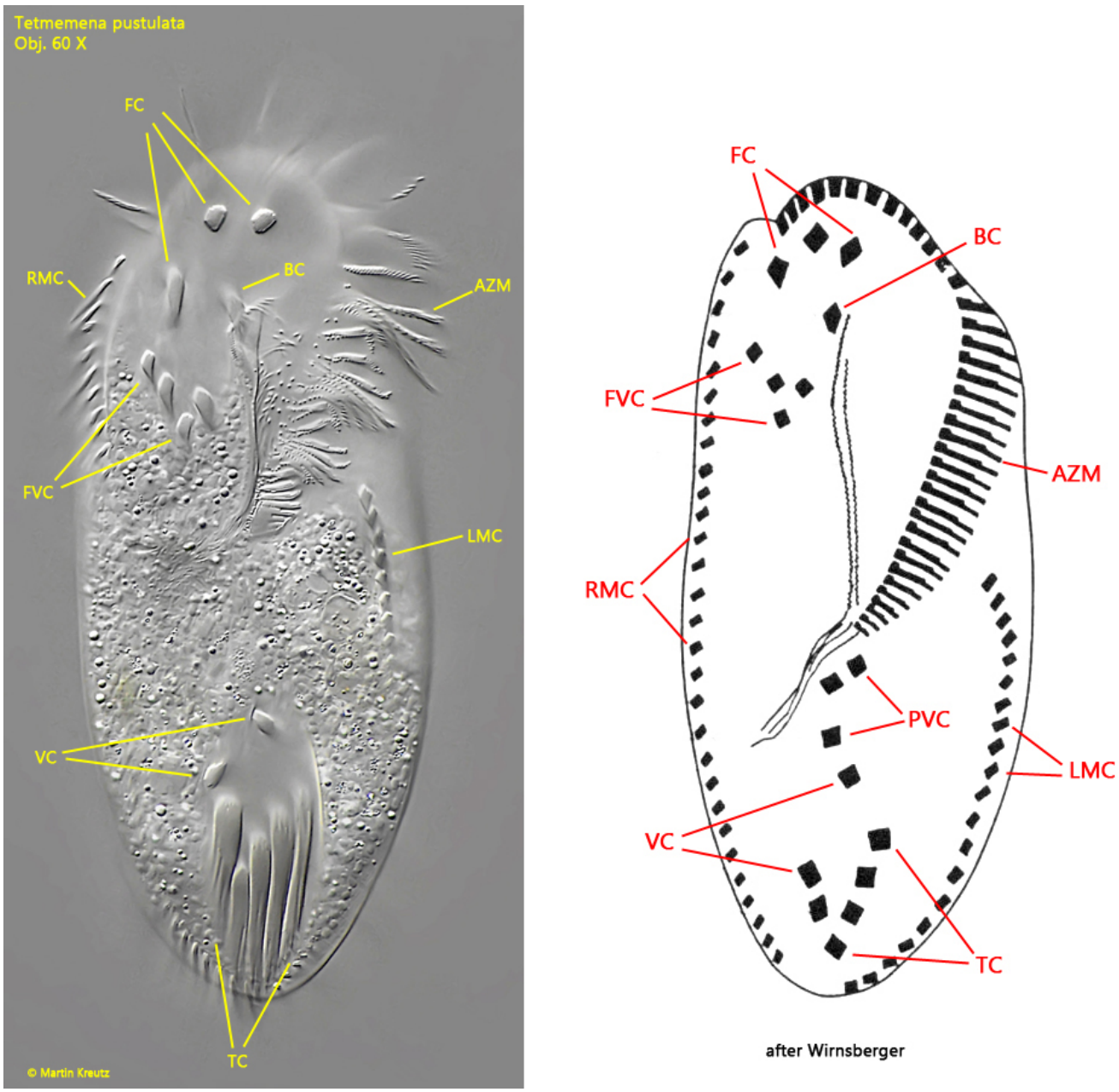


Fig. 5: *Tetmemena pustulata*. L = 144 µm. Comparision of the pattern of the ventral ciliature with a schematic drawing from Wirnsberger. The post-ventral cirri (PVC) are out of focal plane. AZM = adoral zone of membranelles, FVC = fronto-ventral cirri, LMC = left marginal cirri, RMC = right marginal cirri, TC = tranverse cirri, VC = ventral cirri. Obj. 60 X.

Fig. 6 a-b: *Tetmemena pustulata*. A squashed specimen from dorsal. Note the 6 rows of short dorsal cilia (1–6). CV = contractile vacuole, Ma 1 + Ma 2 = macronuclei, Mi 1 + Mi 2 = micronuclei. Obj. 60 X.

Fig. 7 a-b: *Tetmemena pustulata*. L = 130 µm. A slightly squashed specimen from ventral. Obj. 100 X.