Stokesia vernalis Wenrich, 1929

Most likely ID: n.a.

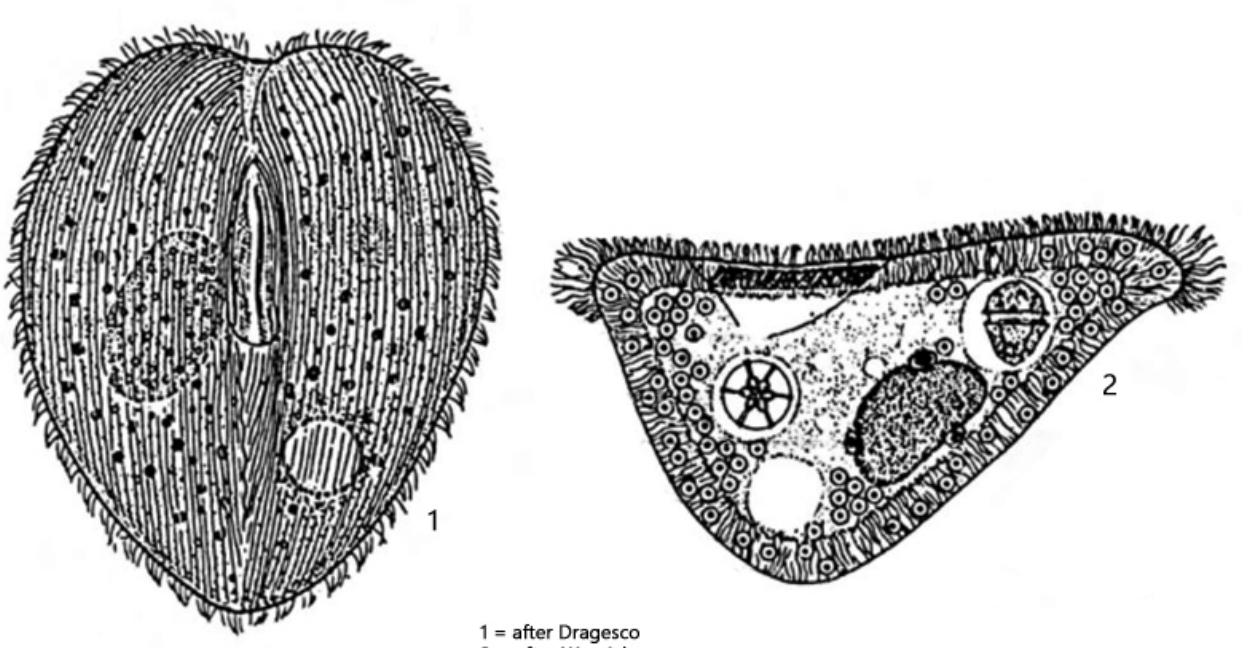
Synonym: n.a.

Sampling location: Mühlhalden pond, Pond of the waste disposal company Constance, Simmelried

Phylogenetic tree: *Stokesia vernalis*

Diagnosis:

- body cap-shaped in lateral view, with roundes corners
- in ventral view slightly heart-shaped
- diameter 100–220 µm
- oral apparatus an elongated depression
- oral cavity with three adoral membranelles
- an almost circular suture arise from oral apparatus
- macronucleus ellipsoidal, at right side of body
- 1–4 micronuclei
- contractile vacuole dorsal, with collecting ducts, 3–5 excretion pores
- fringe of extrusomes beneath pellicle, fusiform, 8 µm
- symbiotic algae present, sometimes one few cells
- ventral about 250 longitudinal ciliary rows
- dorsal side glabrous, except of suture
- cortex with rectangular pattern



1 = after Dragesco
2 = after Wenrich

Stokesia vernalis

I only find *Stokesia vernalis* at long intervals of several years, mainly in the plankton. However, I have also observed a large population between floating plants in the Simmelried in May 2020.

The body shape of *Stokesia vernalis* is somewhat difficult to capture because the specimens swim in a tumbling motion. If the layer thickness is reduced, the specimens deform quickly.

In lateral view, the body is cap-shaped, with the tip of the cap forming the dorsal side. The ventral side, in the middle of which lies the mouth opening, is almost flat (s. fig. 1 a-b). Ventrally, the body is slightly heart-shaped, as it is slightly constricted by a suture running around almost the whole body. I myself could not recognize this heart shape in freely swimming specimens. In fixed, slightly squashed specimens, this constriction caused by the sutuere is no longer recognizable.

The oral apparatus is an elongated groove at the base of which runs a broad adoral membranelle. Two further, narrower membranelles are recognizable to the left of it (s. fig. 3 a-b). Finally, at the right margin of the mouth opening there is an undulating membrane, which I could not recognize exactly.

The contractile vacuole is located dorsally and has star-shaped collecting ducts (s. fig. 4 a-b). The collected water is released through several excretory pores. In my population mostly 4–5 excretory pores were visible (s. fig. 4 b).

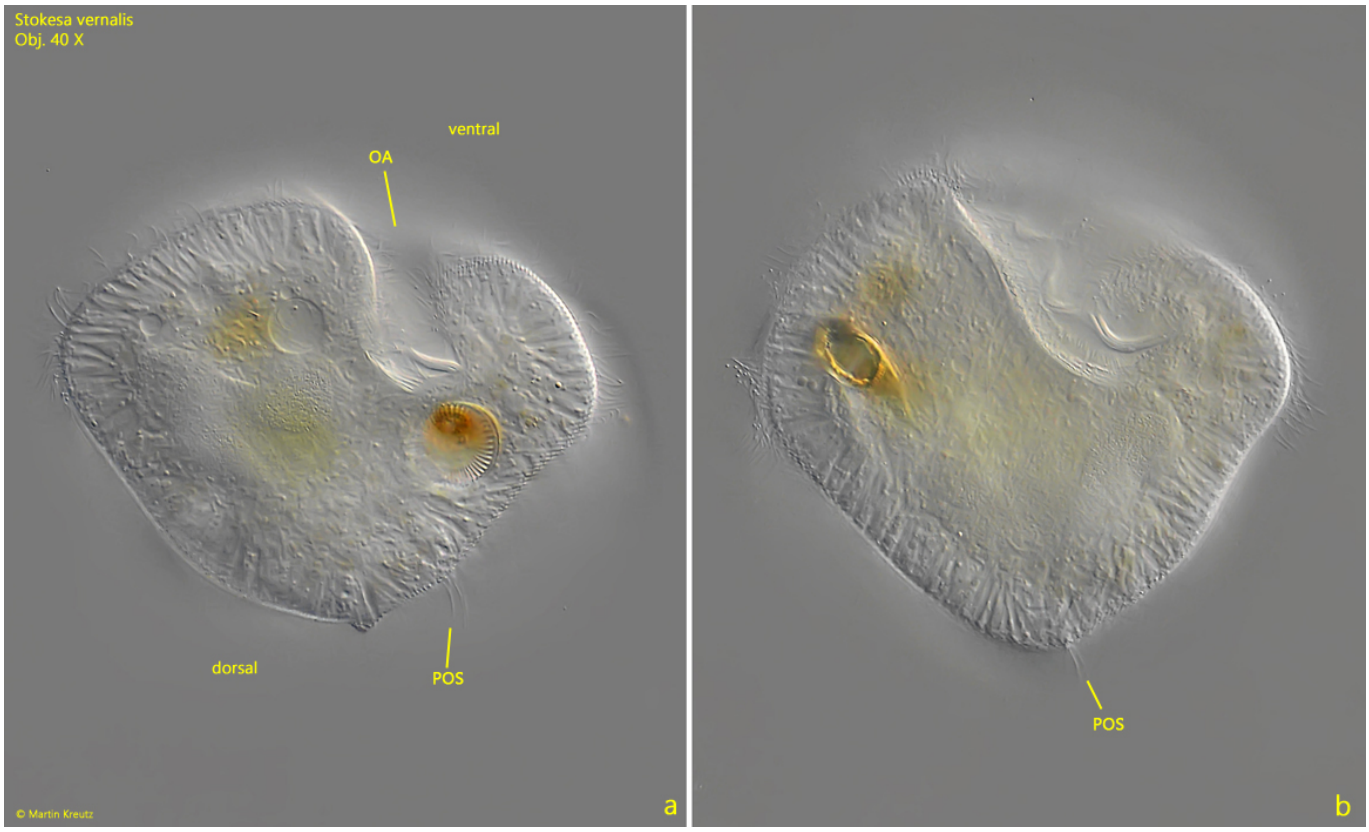


Fig. 1 a-b: *Stokesia vernalis*. D = 147 µm. A freely swimming specimen in lateral view. The body is cap-shaped with rounded corners. Note the glabrous dorsal side apart of the row of cilia of the post-oral suture (POS). OA = oral apparatus. Obj. 40 X.

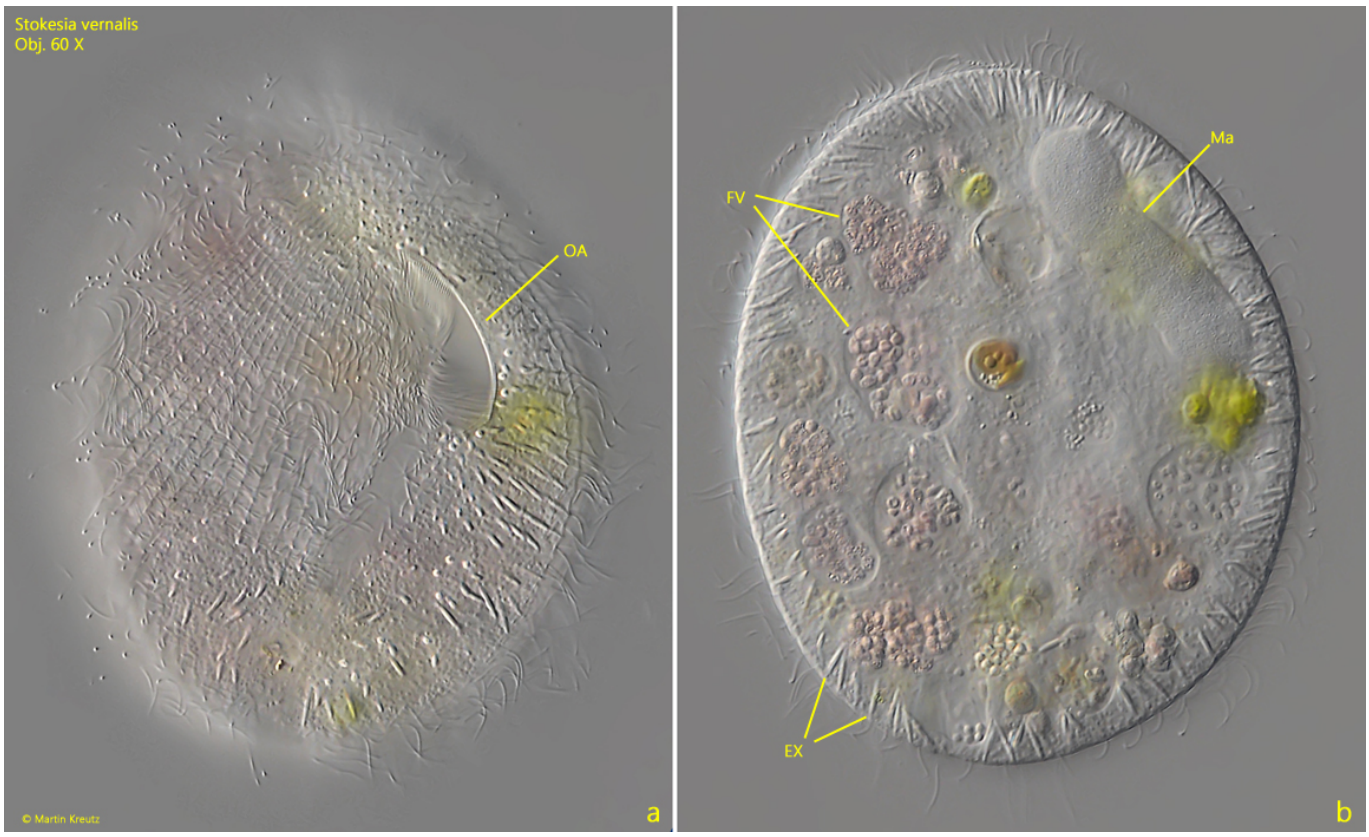


Fig. 2 a-b: *Stokesia vernalis*. Two focal planes of a slightly squashed specimen from ventral. EX = extrusomes, FV = food vacuoles, Ma = macronucleus, OA = oral apparatus. Obj. 60 X.

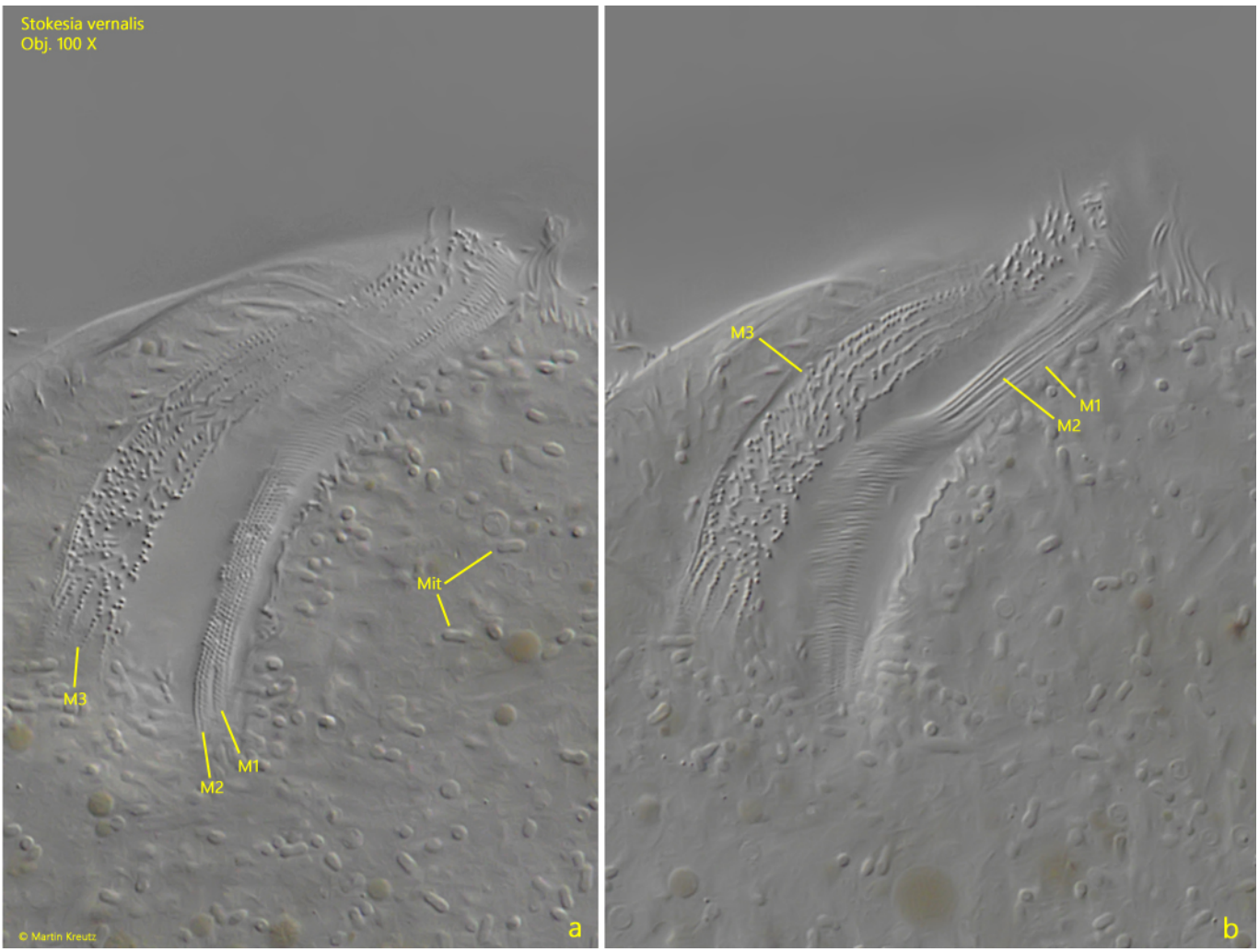


Fig. 3 a-b: *Stokesia vernalis*. Two focal planes of the oral apparatus in a squashed specimen. There are three adoral membranelles (M1-M3) visible. The mebranelle 3 is the broadest. In the cytoplasm many scattered mitochondria (Mit) are visible. Obj. 100 X.

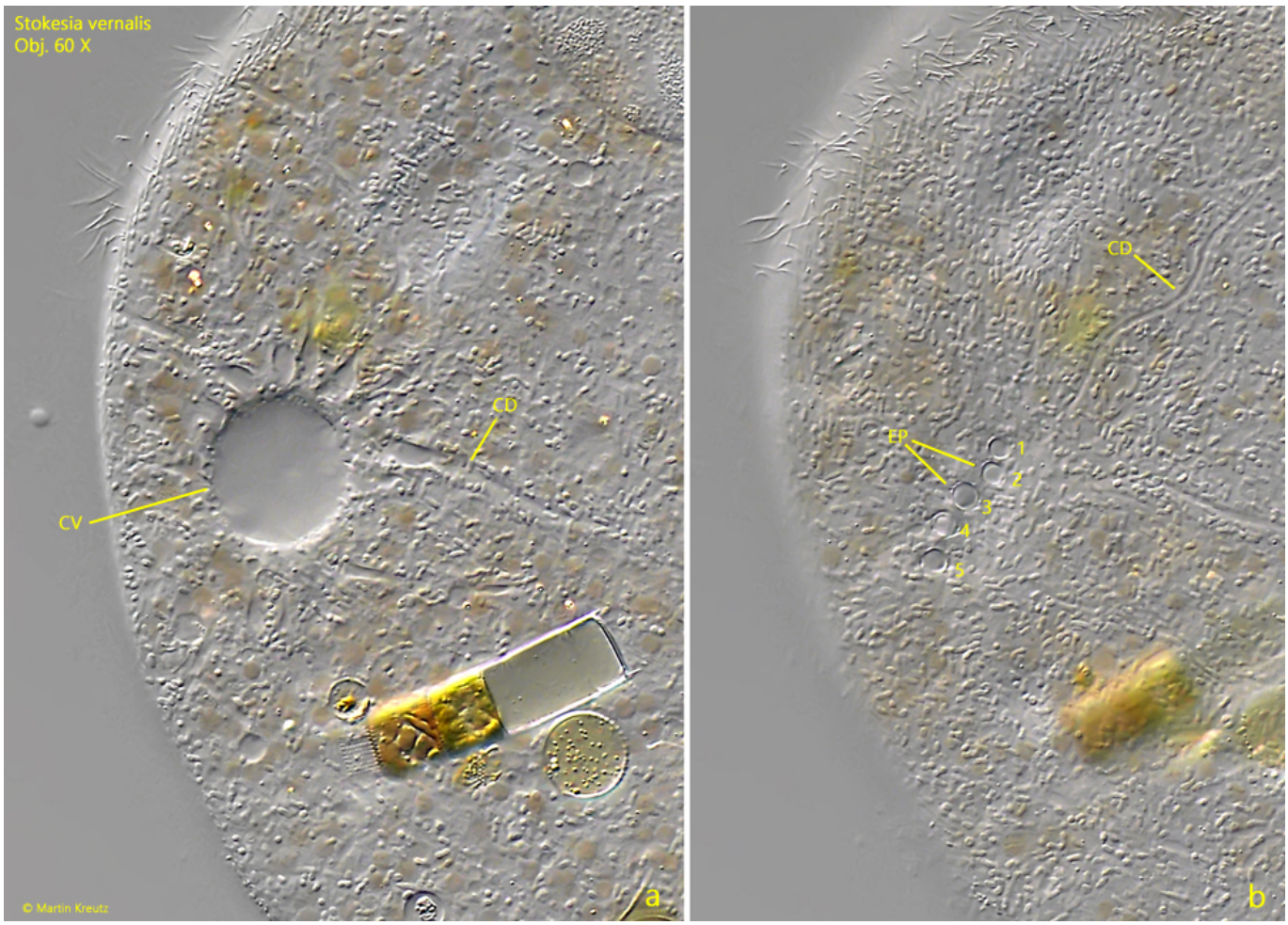


Fig. 4 a-b: *Stokesia vernalis*. The contractile vacuole (CV) with collecting ducts (CD) is located on the dorsal side. The contractile vacuole of this specimen has 5 excretion pores (EP). Obj. 60 X.

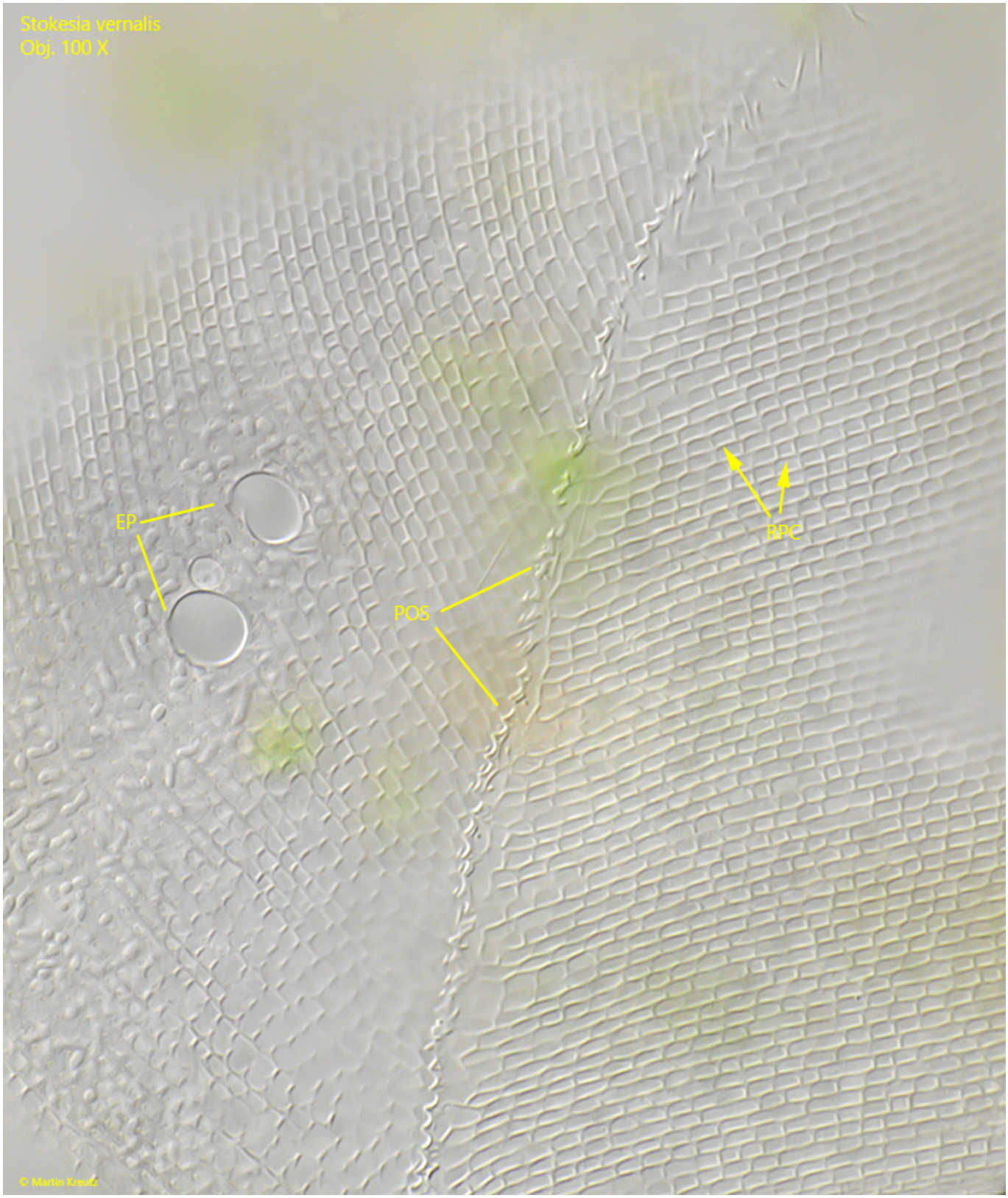


Fig. 5: *Stokesia vernalis*. A squashed specimen from dorsal. Focal plane on the pre-oral suture (POS) which runs from the ventral side to the posterior third on the dorsal side. Two excretion pores (EP) of the contractile vacuole can be seen to the left of the pre-oral suture, enlarged by the pressure of the coverslip. The cortex shows a conspicuous rectangular pattern (RPC). Obj. 100 X.