Thylakidium pituitosum Foissner, 1980

Most likely ID: n.a.

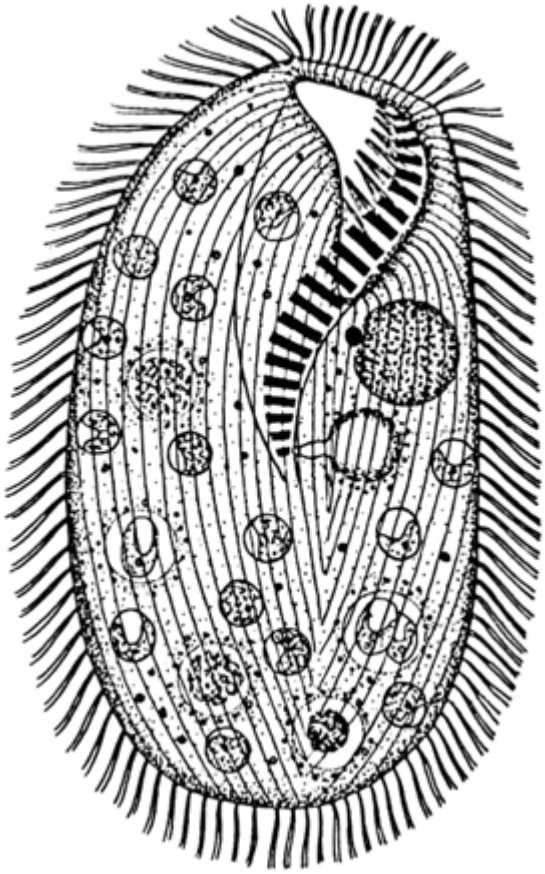
Synonym: n.a.

Sampling location: Paradieswiesen, Simmelried

Phylogenetic tree: *Thylakidium pituitosum*

Diagnosis:

- body ovoid, anteriorly truncated, posterior end broadly rounded
- length 70–100 µm
- cytostome apically with ventral incision, reaching almost equator
- vestibulum funnel-shaped, lined with the S-shaped adoral zone of membranelles
- cytoplasm green due to symbiotic algae
- macronucleus spherical or ellipsoid with one adjacent micronucleus
- body uniformly ciliated with double cilia
- one contractile vacuole, ventral near equator
- contractile vacuole empties into vestibulum via a short channel
- lives in case of mucus (hard to see)



Thylakidium pituitosum

I find *Thylakidium pituitosum* frequently and regularly, especially in the Simmelried. There the specimens are usually found between floating plant masses. The species also often reproduces in old samples and can then be found on the side of the vessel facing the light.

In fresh samples, the specimens swim quickly and are then easy to confuse with *Paramecium bursaria*. In a micro-aquarium with a high layer thickness, however, the specimens soon begin to build very transparent cases. These can usually only be recognized by the adhering bacteria and the fact that the specimens remain dormant.

The body structure of *Thylakidium pituitosum* is similar to that of the colpodean genera *Bursaria* or *Bursaridium* with an apical cytostome that merges into a funnel-shaped vestibulum. This has a ventral incision that can reach up to the cell equator (s. figs. 2 a-b and 3 a-c). The adoral zone of membranelles runs clockwise in the vestibulum. In lateral view it appears S-shaped (s. figs. 3 c and 5).

The symbiotic algae of *Thylakidium pituitosum* are quite large with a diameter of about 6 µm and are slightly asymmetrical in shape. The most cells are not completely round and there are also oblong or oval-shaped cells. The cells have a conspicuous pyrenoid and a bell-shaped chloroplast. Due to their size and asymmetrical cell shape, however, they cannot be *Chlorella*.

Thylakidium pituitosum can easily be confused with the similar species *Thylakidium truncatum*, which has a kidney-shaped macronucleus. Similar species of the genera *Bursaria* or *Bursaridium* do not have symbiotic algae.

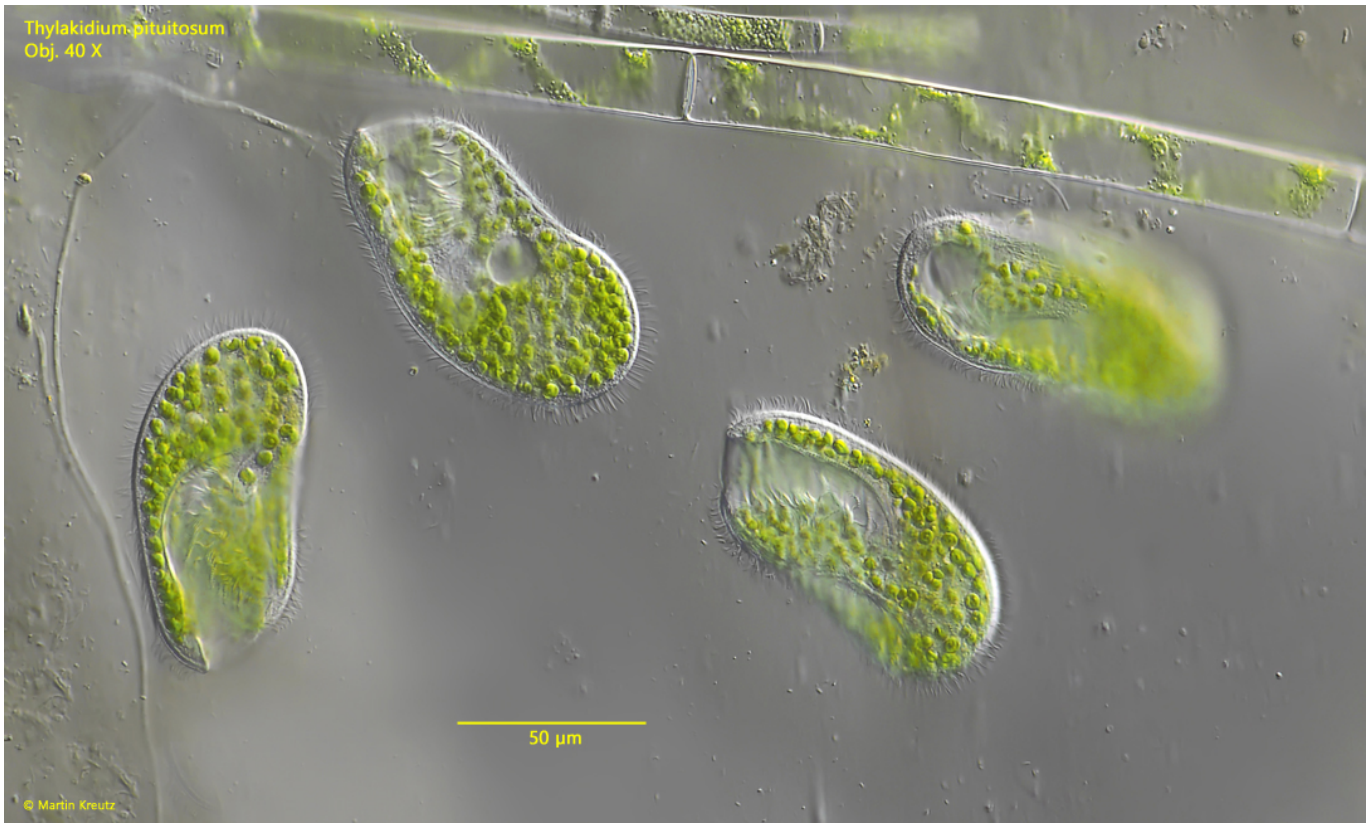


Fig. 1: *Thylakidium pituitosum*. L = 94–99 µm. Some specimens in their mucous cases (not visible in DIC). Obj. 40 X.

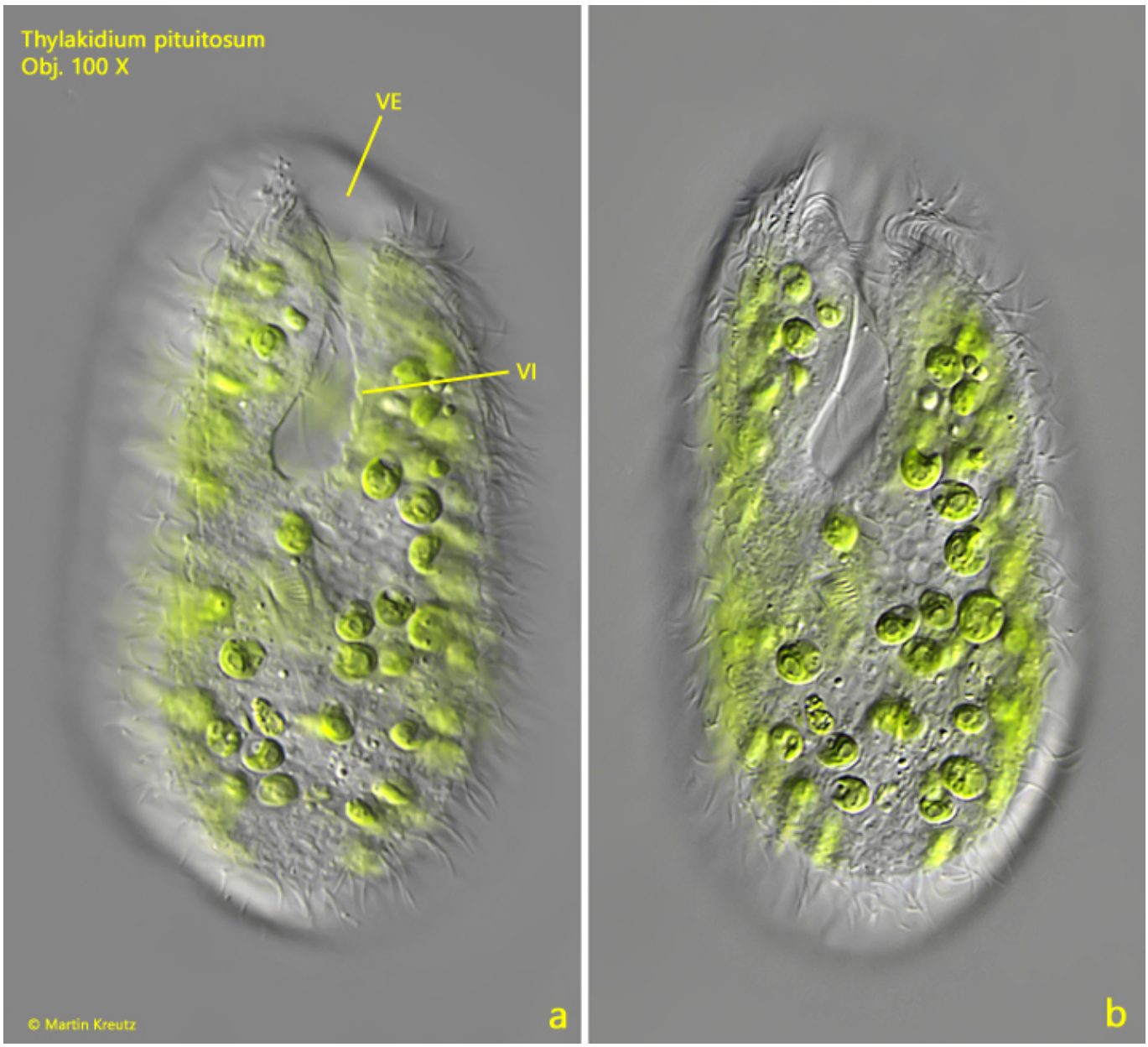


Fig. 2 a-b: *Thylakidium pituitosum*. L = 85 µm. Two focal planes of a freely swimming specimen in ventral view. Note the vestibulum (VE) with the deep, ventral incision (VI). Obj. 100 X.

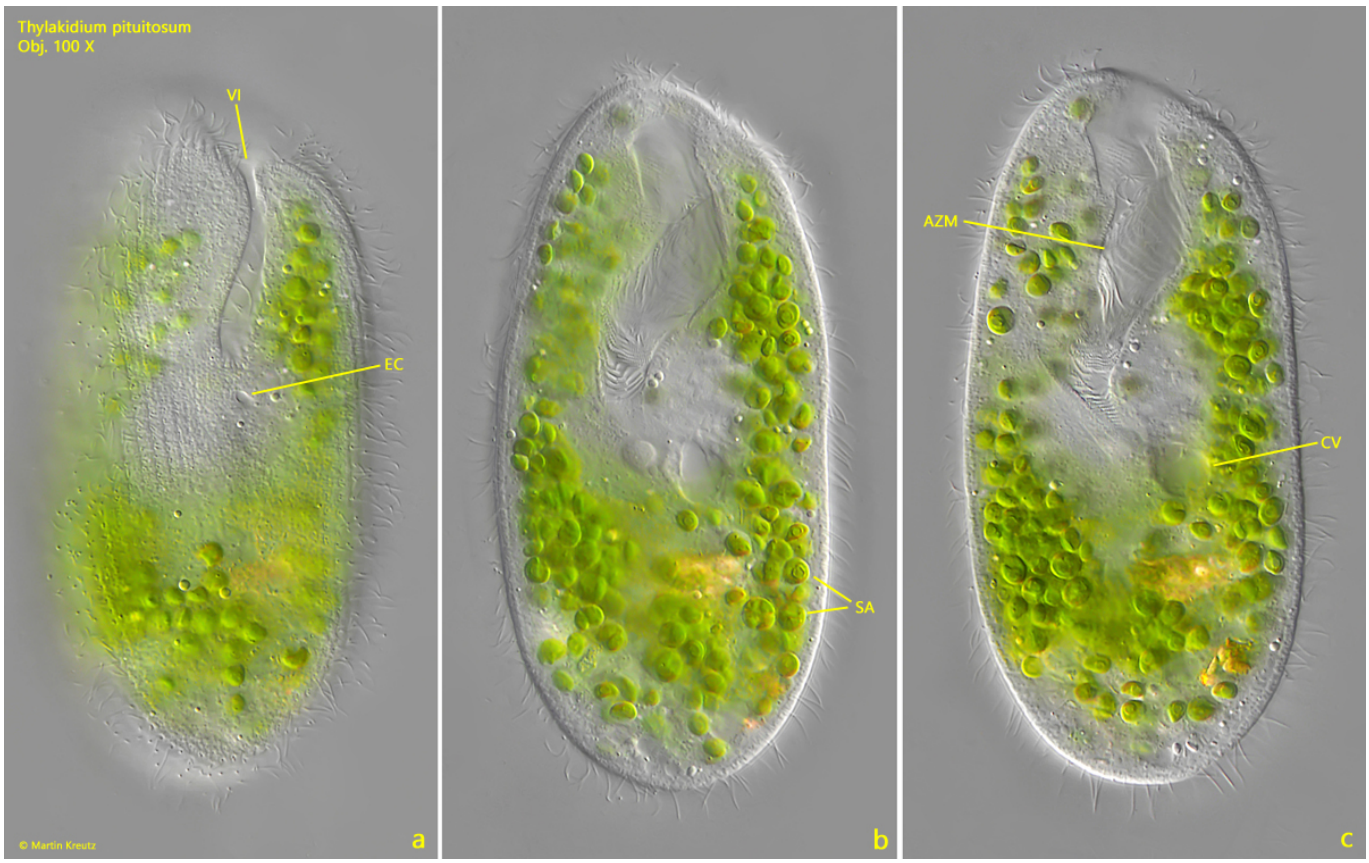


Fig. 3 a-c: *Thylakidium pituitosum*. L = 115 µm. Different focal planes of a slightly squashed specimen in ventral view. Note the emptying channel (EC) between the contractile vacuole (CV) and the vestibulum (looks similar to an excretion porus due to optical section of the channel). The vestibulum is lines with the S-shaped adoral zone of membranelles (AZM). SA = symbiotic algae. VI = ventral incision of the vestibulum. Obj. 100 X.

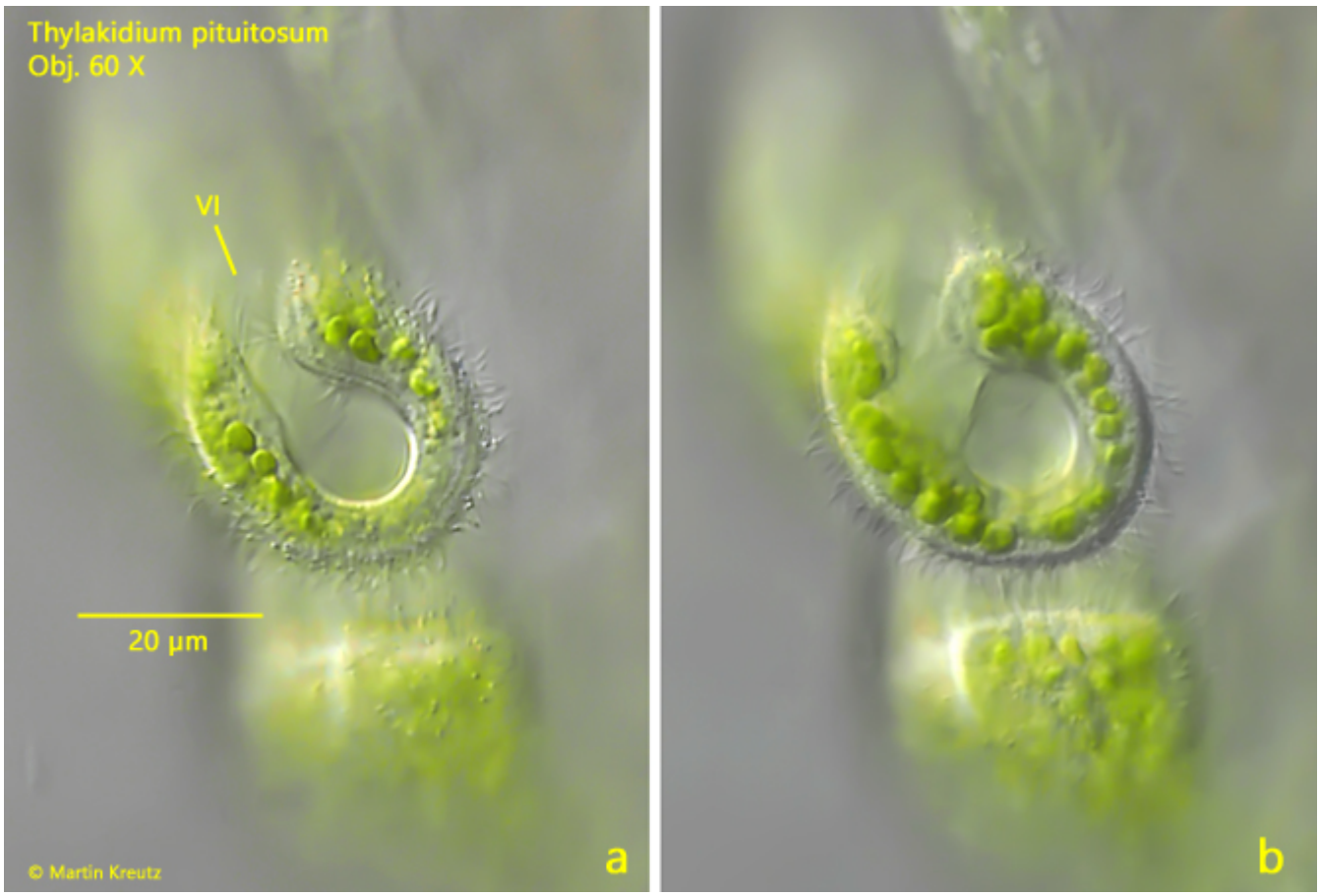


Fig. 4 a-b: *Thylakidium pituitosum*. Apical view into the funnel-shaped vestibulum. Near 11 o'clock the ventral incision (VI) is visible. Obj. 100 X.



Fig. 5: *Thylakidium pituitosum*. In a squashed specimen the S-shaped adoral zone of membranelles (AZM) is visible and the spherical shaped macronucleus (Ma). SA = symbiotic algae. Obj. 100 X.



Fig. 6: *Thylakidium pituitosum*. The spherical macronucleus (Ma) and the ellipsoid shaped micronucleus (Mi) in a squashed specimen. Obj. 100 X.

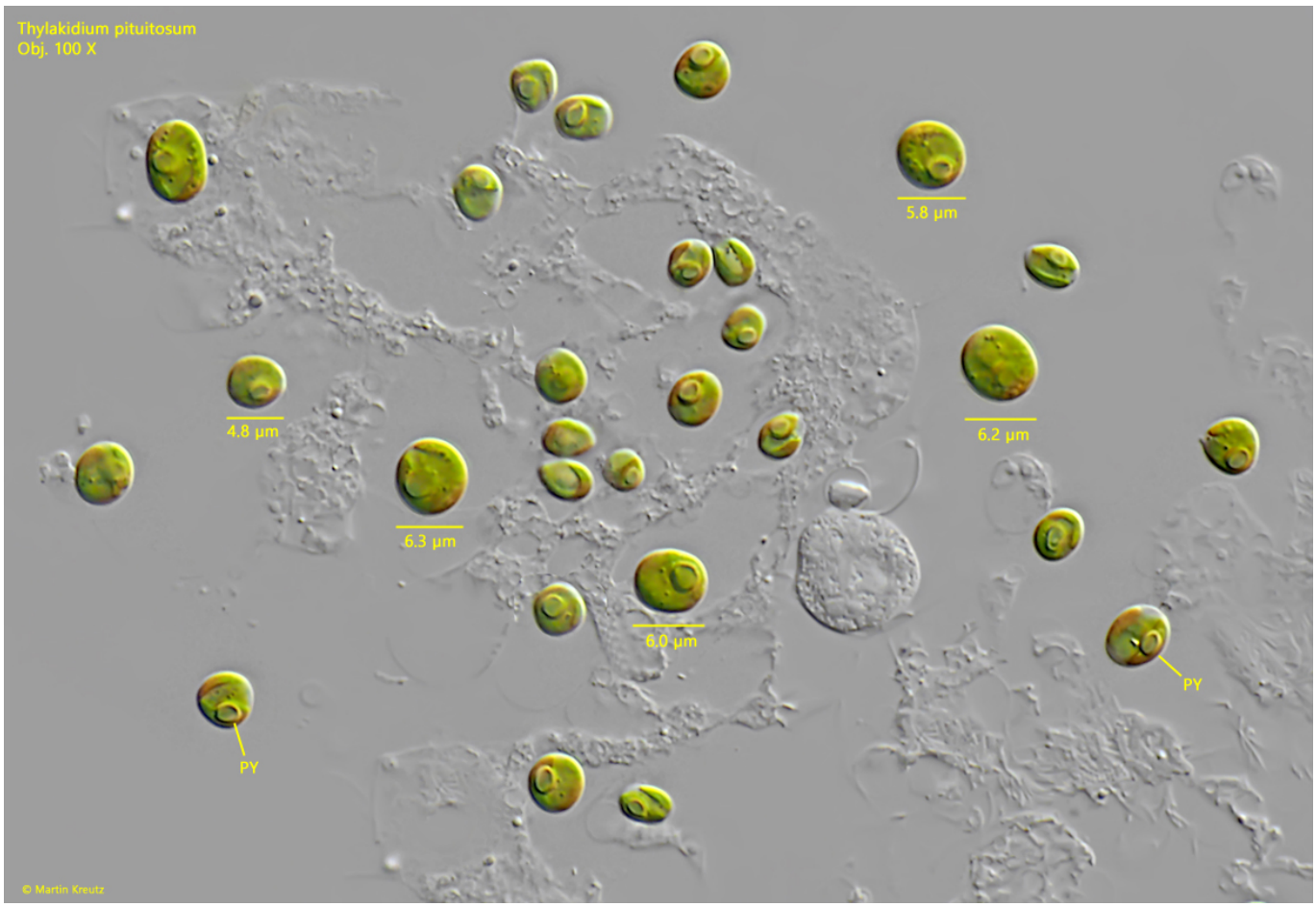


Fig. 7: *Thylakidium pituitosum*. The symbiotic algae are slightly asymmetrical shaped and have a diameter of 5.8-6.3 µm. Algal cells below 5 µm diameter are ovoid young cells after cell division. The algae are not from the *Chlorella* type. Obj. 100 X.