***Spathidiodes euglenivora* Kahl, 1930**

Most likely ID: n.a.

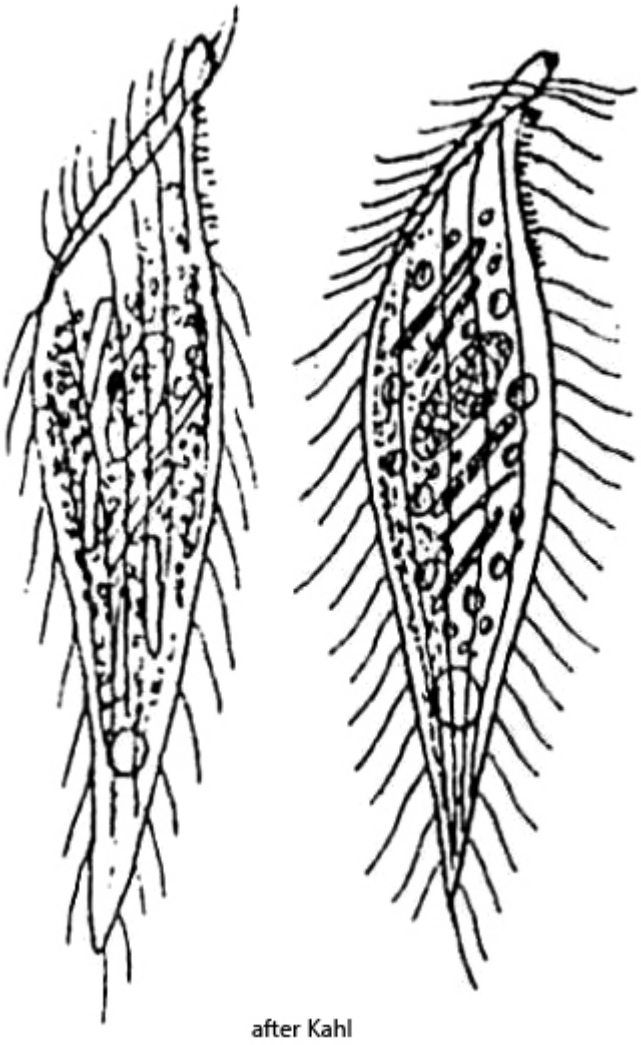
Synonym: *Spatidiella euglenivora*

Sampling location: Purren pond, Simmelried

Phylogenetic tree: *Spathidiodes euglenivora*

Diagnosis:

- body lanceolate or fusiform, acute posterior end
- length 90–130 µm
- oral bulge slanted by about 45°
- no extrusomes visible
- macronucleus elongate ellipsoidal
- micronucleus oval attached to macronucleus
- dorsal brush distinct, bristles short
- somatic cilia long, widely spaced
- cytoplasm filled with lipid droplets and paramylon grains
- contractile vacuole subterminal
- feeding exclusivley on colorless euglenids



Spathidiodes euglenivora

So far, I have only found 3 specimens of *Spathidiodes euglenivora.* Two specimens came from the Purren Pond and one specimen from the Simmelried. I found all three specimens in the months of October and November.

Spathidiodes euglenivora was originally described by Kahl as *Spathidiella euglenivora*. Later, the species was transferred to the genus *Spathidiodes* by Foissner & Xu (2007). Foissner & Xu also mention that the species within the genus *Spathidiodes* (there are only 3) are all insufficiently studied, and it is questionable whether separation into a distinct genus is necessary.

In fresh samples, the specimens of *Spathidiodes euglenivora* stand out due to their shape. The anterior two-thirds of the body are almost parallel-sided before the posterior third tapers into a tail-like end after the large, subterminal contractile vacuole. In my opinion, the drawings by Kahl (s. drawings above) do not represent this shape well. However, specimens of *Spathidiodes euglenivora* with the same

shape as those in my population were also found by Silverman (2026) in the USA (s. link below).

The oral bulge slopes down at an approximately 45° angle towards the ventral side. On the dorsal side, the oral lip is said to have a beak-like extension, which I could never see as clearly as Kahl depicted it (s. drawings above). Kahl mentions that no extrusomes are visible in the oral bulge. However, in at least one specimen from my population, I was able to observe rod-shaped extrusomes with a length of 2.5–3 µm (s. fig. 2 a). The dorsal brush was described by Kahl as short. In my specimens, however, the bristles were strikingly long (s. fig. 1 a). In all specimens, I was able to recognize the ellipsoidal macronucleus, but in no case could I clearly identify the micronucleus.

Kahl described *Spathidiodes euglenivora* as a food specialist that feeds exclusively on one species of a colorless euglenid. He was able to detect numerous paramylon grains of these euglenids in the cytoplasm. However, in my specimens, I could not detect paramylon grains in any case. Instead, the cytoplasm was filled with lipid droplets and numerous symbiotic bacteria (s. fig. 4 a-c). These symbiotic bacteria are not mentioned by either Kahl or Foissner & XU. This may be because they can only be seen at high magnification between the lipid droplets. As far as I could recognize it, at least two types of symbiotic bacteria are present, which bear a strong resemblance to those in *Discomorphella pectinata*.

More images and information on *Spathidiodes euglenivora*: Dr. Jeffrey Silverman-iNaturalist-*Spathidiodes euglenivora*

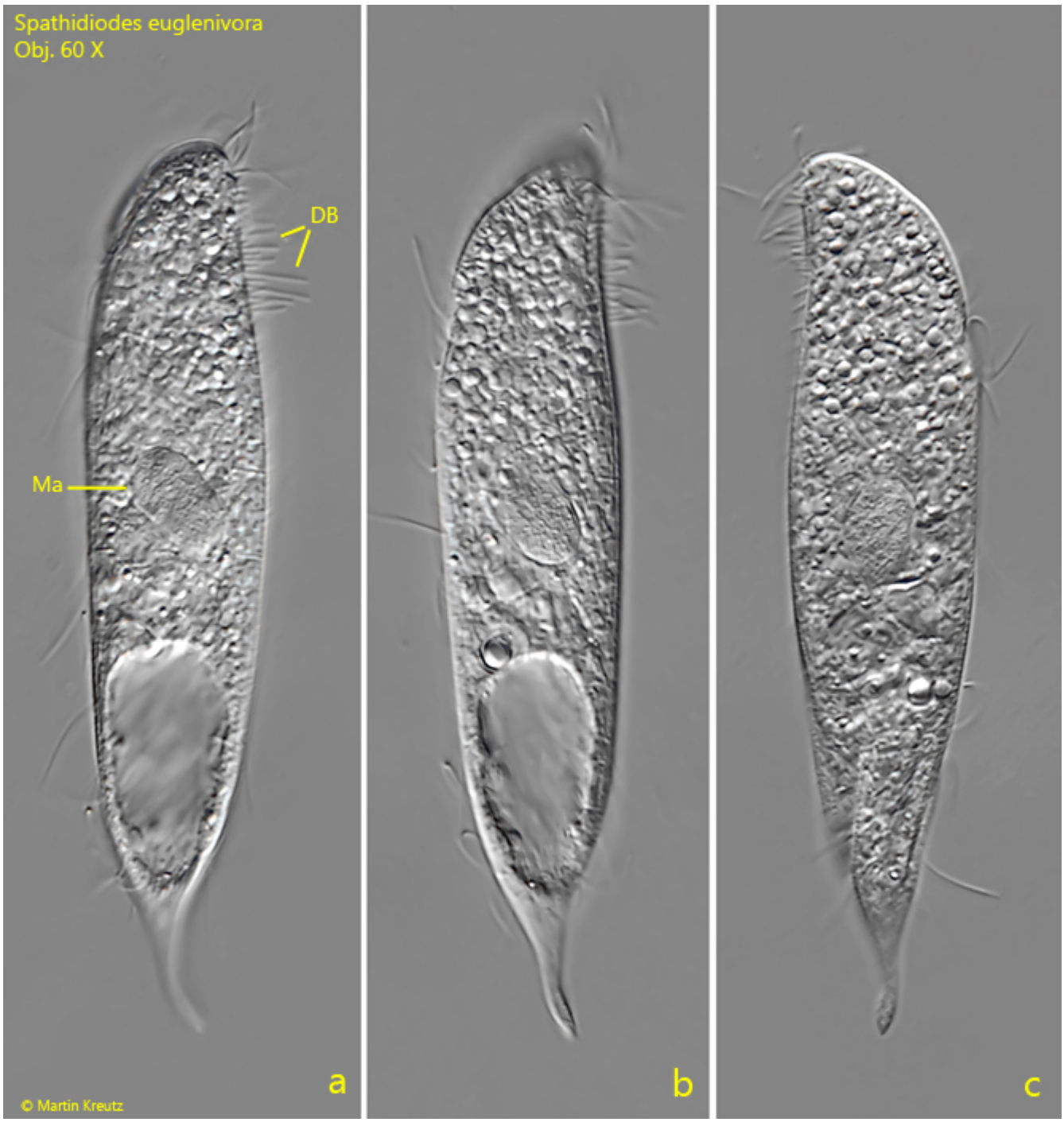


Fig. 1 a-c: *Spathidiodes euglenivora*. L = 98 µm. A freely swimming specimen from left (a, b) and from right (c). The bristles of the dorsal brush (DB) are prominent and long. The specimen was found in October 2017 in the Simmelried. Obj. 60 X.



Fig. 2 a-b: *Spathidiodes euglenivora*. L = 98 µm. The same specimen as shown in fig. 1 a-c. In the oral bulge a few rod-shaped extrusomes (EX) are visible with a length of 2.5-3 µm. Ma = makronucleus, Mi ? probably the micronucleus. Obj. 60 X.

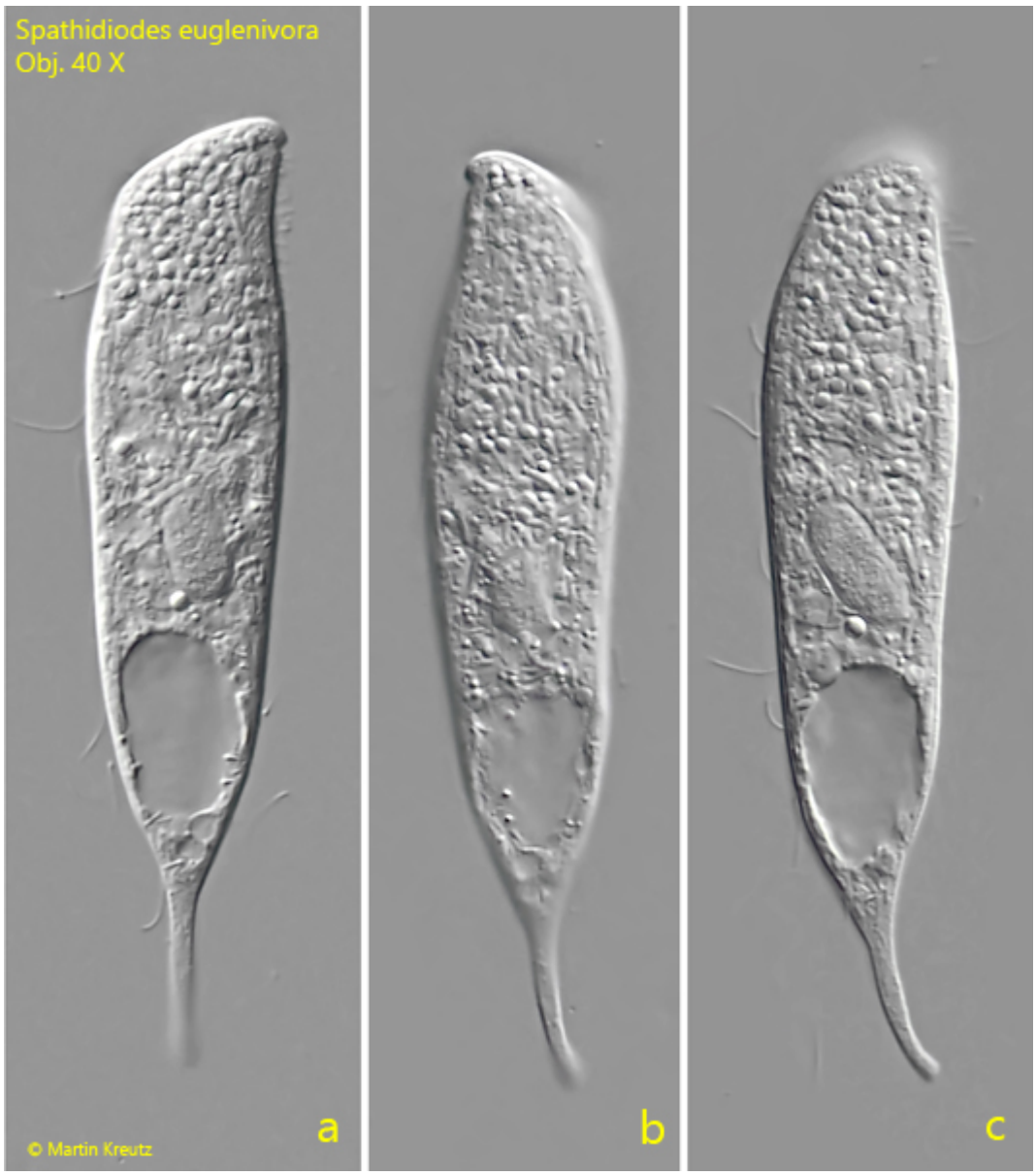


Fig. 3 a-c: *Spathidiodes euglenivora*. L = 105 µm. A second specimen found in October 2021 in the Purren pond. Obj. 40 X.

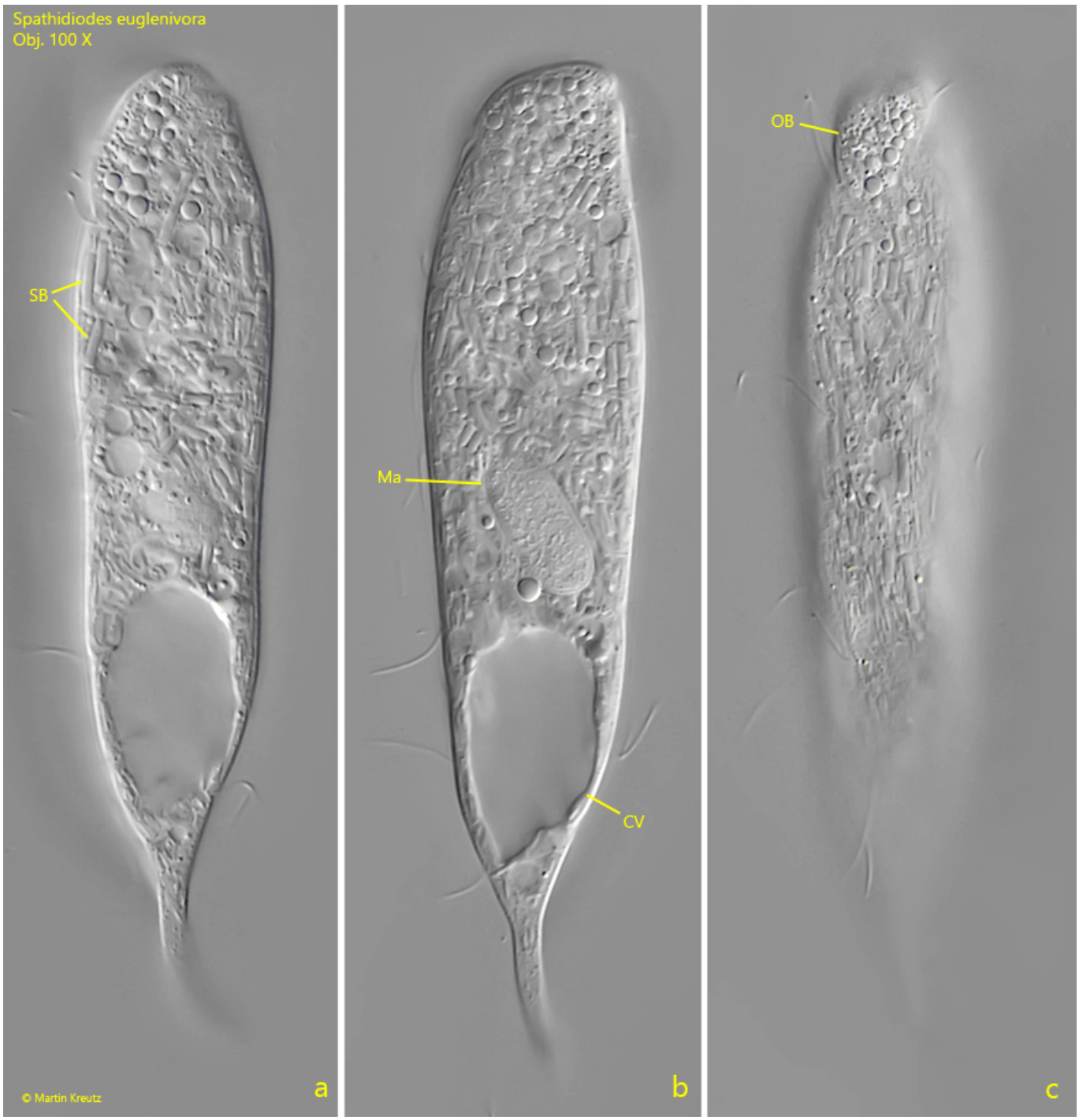


Fig. 4 a-c: *Spathidiodes euglenivora*. L = 105 µm. The same specimen as shown in fig. 3 a-c from left (a, b) and from ventral (c). The cytoplasm of the specimen in completely filled with at least two types of symbiotic bacteria (SB). Ma = macronucleus, OB = oral bulge. Obj. 100 X.

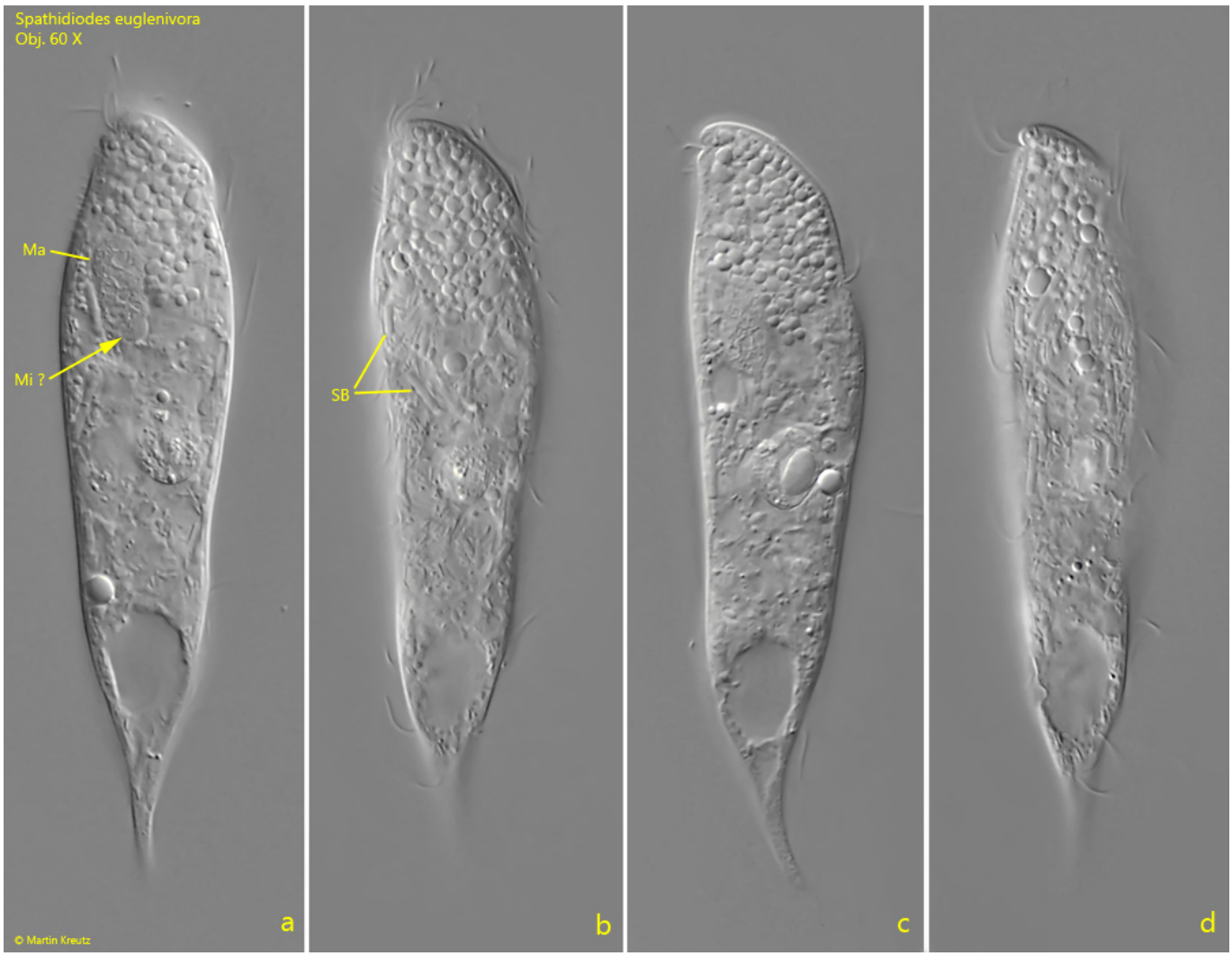


Fig. 5 a-d: *Spathidiodes euglenivora*. L = 96 µm. A third specimen found in November 2023 in the Purren pond. In addition to lipid droplets, many symbiotic bacteria (SB) can also be seen in this specimen, which are of the same type as in the specimen found 2 years earlier (s. fig. 4 a-c). Ma = macronucleus. Mi ? = probably the micronucleus. Obj. 60 X.