

Rhinothrix barbatula

(Penard, 1922) Foissner, Xu & Kreutz, 2005

Most likely ID: n.a.

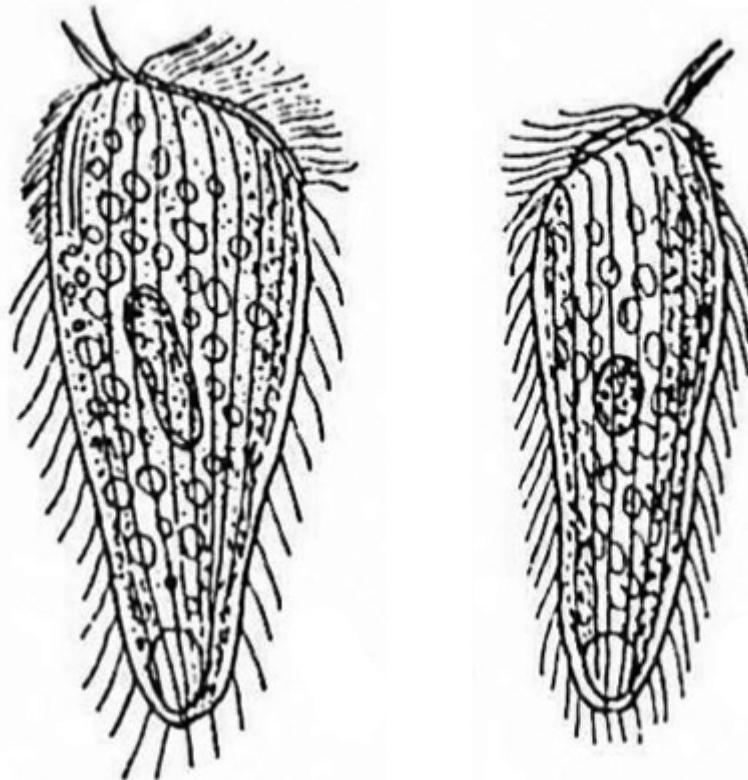
Synonym: *Spathidium barbatula*

Sampling location: [Simmelried](#)

Phylogenetic tree: [Rhinothrix barbatula](#)

Diagnosis:

- body slender pyriform or club-shaped
- length about 120 µm
- oral bulge short, inconspicuous
- apically two distinct palps with acute distal ends, about 10–12 µm long
- tight rows of somatic cilia
- extrusomes absent
- terminal cilia slightly elongated
- macronucleus elongated ellipsoid, one adjacent micronucleus
- contractile vacuole terminal



after Kahl

Rhinothrix barbatula

Rhinothrix barbatula is a very rare ciliate. I have only found 3 specimens in May 2003, July 2005 and November 2021. I found all three specimens in the [Simmelried](#) between decomposing plant masses.

Apart from the specimens of *Rhinothrix barbatula* I found, there are very few records. The first description comes from Penard (1922), who only found one specimen and named the species *Holophrya barbatula*. His specimen had the typical apical palps, but no oral bulge was visible. Foissner et al. (2005) therefore assume that Penard found *Holophrya sulcata* or *Holophrya pogonias*, which also have palps. Kahl (1935) then found 3 further specimens on which he was able to demonstrate the inconspicuous oral bulge (s. drawings above) and therefore transferred the species to the genus *Spathidium*. Later, *Spathidium barbatula* was transferred to the genus *Rhinothrix* by Foissner et al. (2005), in which spathidiid ciliates with a palpe-like extension of the oral bulge are grouped together.

Rhinothrix barbatula is difficult to observe in vivo. The ciliate swims quickly and after the coverslip is applied, the two antenna-shaped palps are quickly melted. That means there is little time to photograph the free-swimming specimens before they denature. Squashed specimens also melt very easily, which makes precise examination at high magnifications more difficult. As a result, my yield of usable photos is also quite low.

In the first specimen found in May 2003 (s. figs. 1 a-b and 2), I was unable to detect the oral bulge. This led Foissner to assume that the taxonomic position is still uncertain, as it may not be a spathidiid ciliate after all. Only with the second specimen from July 2005 did I obtain better photos of the free-swimming specimen on which the two palps are clearly visible (s. fig. 3 a-e) and also evidence of the oral bulge, which is inconspicuous and flat (s. fig. 4). In the free-swimming specimen the oral bulge is not visible.

The three specimens from my population essentially correspond to the description by Kahl. The specimens were 108-122 μm long. The two palps were 10-12 μm long. Both have the same length. The macronucleus is elongated ellipsoid and about 30-35 μm long. The micronucleus, which is adjacent to the macronucleus, could only be found in the third specimen (s. fig. 7). All specimens were club-shaped and tapered in the posterior third. Kahl could not detect any extrusomes in his specimens. In my specimens I could detect rod-shaped extrusomes with a length of 7.8-8.4 μm in the first two specimens (s. figs. 2 and 5), but none in the third specimen. It is therefore unclear whether the extrusomes in the first two specimens possibly originate from prey organisms.



Fig. 1 a-b: *Rhinothrix barbatula*. L = 122 μ m. A freely swimming specimen found in May 2003. Only one of the two apical palps (AP) is in the focal plane. DB = dorsal brush. Obj. 40 X.



Fig. 2: *Rhinothrix barbatula*. The squashed specimen as shown in fig. 1 a-b. The macronucleus (Ma) is elongated ellipsoid and some rod-shaped extrusomes (EX) scattered in the cytoplasm are visible. Obj. 100 X.

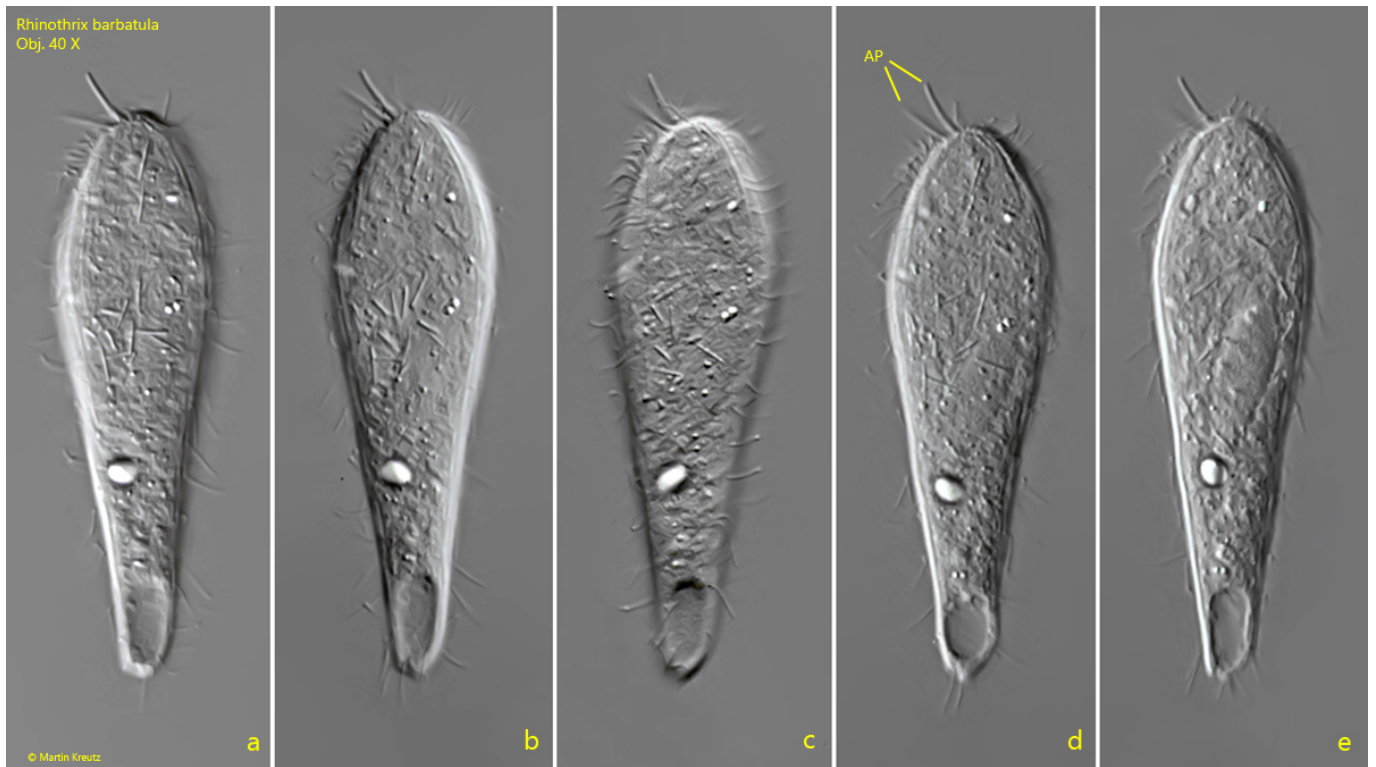


Fig. 3 a-e: *Rhinothrix barbatula*. L = 113 μ m. The freely swimming second specimen found in July 2005. Note the both apical palps (AP) with a length of 11.8 μ m. Obj. 40 X.



Fig. 4: *Rhinothrix barbatula*. Focal plane on the macronucleus (Ma) in the squashed specimen as shown in fig. 3 a-e. Apically the inconspicuous oral bulge is visible. Obj. 100 X.

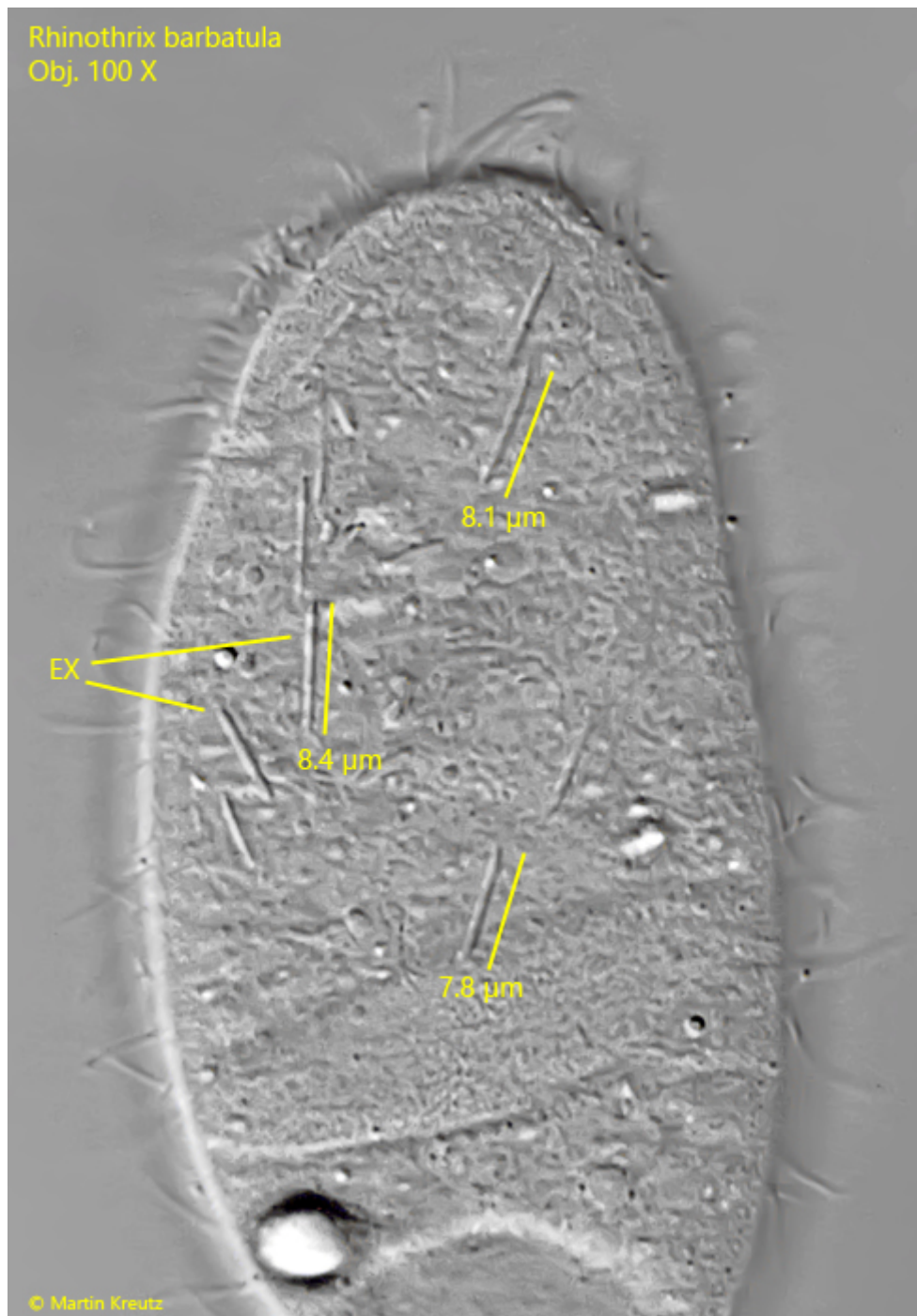


Fig. 5: *Rhinothrix barbatula*. Focal plane on the rod-shaped extrusomes (EX) in the specimen as shown in fig. 3 a-e. The extrusomes are 7.8 -8.4 μm long and have tapered ends. Obj. 100 X.



Fig. 6: *Rhinothrix barbatula*. L = 108 μ m. The freely swimming third specimen found in November 2021. Obj. 40 X.



Fig. 7: *Rhinothrix barbatula*. Focal plane on the macronucleus (Ma) and micronucleus (Mi) in the squashed specimen as shown in fig. 6. In this specimen no extrusomes are visible. Obj. 100 X.