

## ***Loxodes magnus* Stokes, 1887**

**Most likely ID:** n.a.

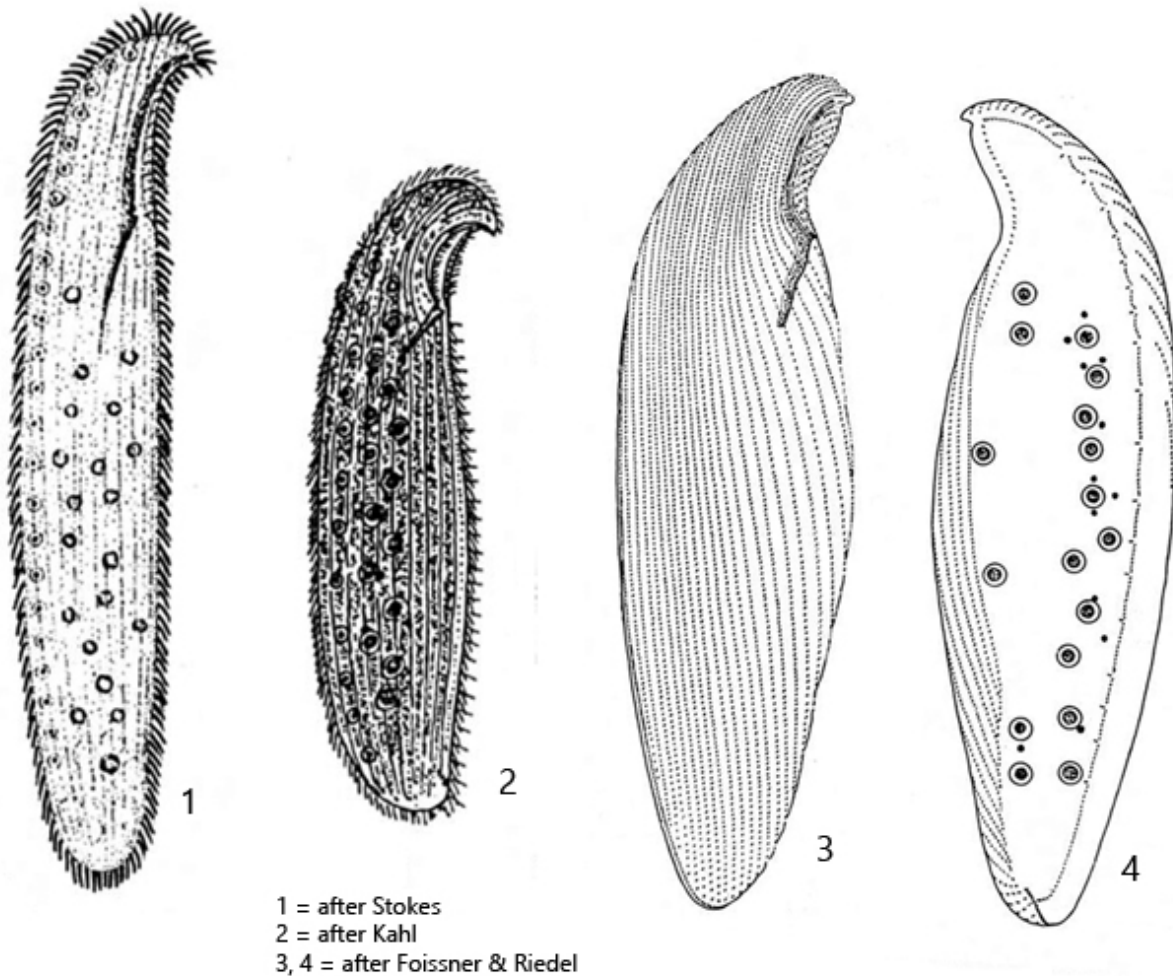
**Synonym:** n.a.

**Sampling location:** [Simmelried](#), [Purren pond](#), [Mainau pond](#), [Bussenried](#), [Bündtlisried](#), [Ulmisried](#), [Mühlhalden pond](#)

**Phylogenetic tree:** [Loxodes magnus](#)

### **Diagnosis:**

- body slender to broadly ellipsoid, anterior end beak-shaped, laterally strongly flattened
- length 300–800 µm, width 80–150 µm
- 3–31 macronuclei (mostly 17) distributed in the cytoplasm in two indistinct rows
- 2–32 micronuclei (mostly 12), some distributed in the cytoplasm, some adjacent to the macronuclei
- no contractile vacuole
- a row of about 10–24 Müller vesicles along the dorsal side
- cytoplasm mostly strongly vacuolated
- pellicle with parallel rows of brownish granules (sometimes colorless)
- right side with 25–32 longitudinal rows of paired cilia
- left side with only two marginal rows of cilia
- oral apparatus immediately behind the beak-shaped anterior end



## Loxodes magnus

*Loxodes magnus* is one of the largest and most conspicuous ciliates in the sapropel. I find it in all my sampling sites with a layer of decaying mud. The specimens are mostly brownish or yellow-brown colored due to pigment granules in the pellicle. But I have also found almost colorless specimens (s. fig. 3). Often *Loxodes magnus* is found together in the samples with the other two species [Loxodes rostrum](#) and [Loxodes striatus](#). From the body shape the *Loxodes* species look similar, by the curved, beak-shaped anterior end. However, *Loxodes magnus* differs from these two species by its size (mostly > 400 µm) and by a large number of macronuclei (mostly 17) distributed in the cytoplasm (s. figs. 2 and 3). The micronuclei, which are also present in large numbers, are partially adjacent to the macronuclei or are also distributed in the cytoplasm (s. fig. 3). The other two species [Loxodes striatus](#) and [Loxodes rostrum](#) possess only two macronuclei, which are either widely separated ([Loxodes striatus](#)) or close together ([Loxodes rostrum](#)). In addition, [Loxodes rostrum](#) possesses characteristic symbiotic algae, which are absent in *Loxodes magnus*.

The genus *Loxodes* has specially constructed Müller vesicles. These are constant vacuoles in which a druse of barium sulfate crystals sits on a plasma stalk (s. also [\*Loxodes striatus\*](#)). It is assumed that this organelles serves for orientation in the water body, similar to an organ of balance. *Loxodes magnus* has 10–24 of these organelles, which are arranged in a row on the dorsal side. They can be recognized quite easily by the highly refractive barium sulfate crystals that shine brightly in DIC (s. fig. 4).



**Fig. 1 a-b:** *Loxodes magnus*. L = 812  $\mu$ m. Two focal planes of a freely swimming specimen. Obj. 20 X.

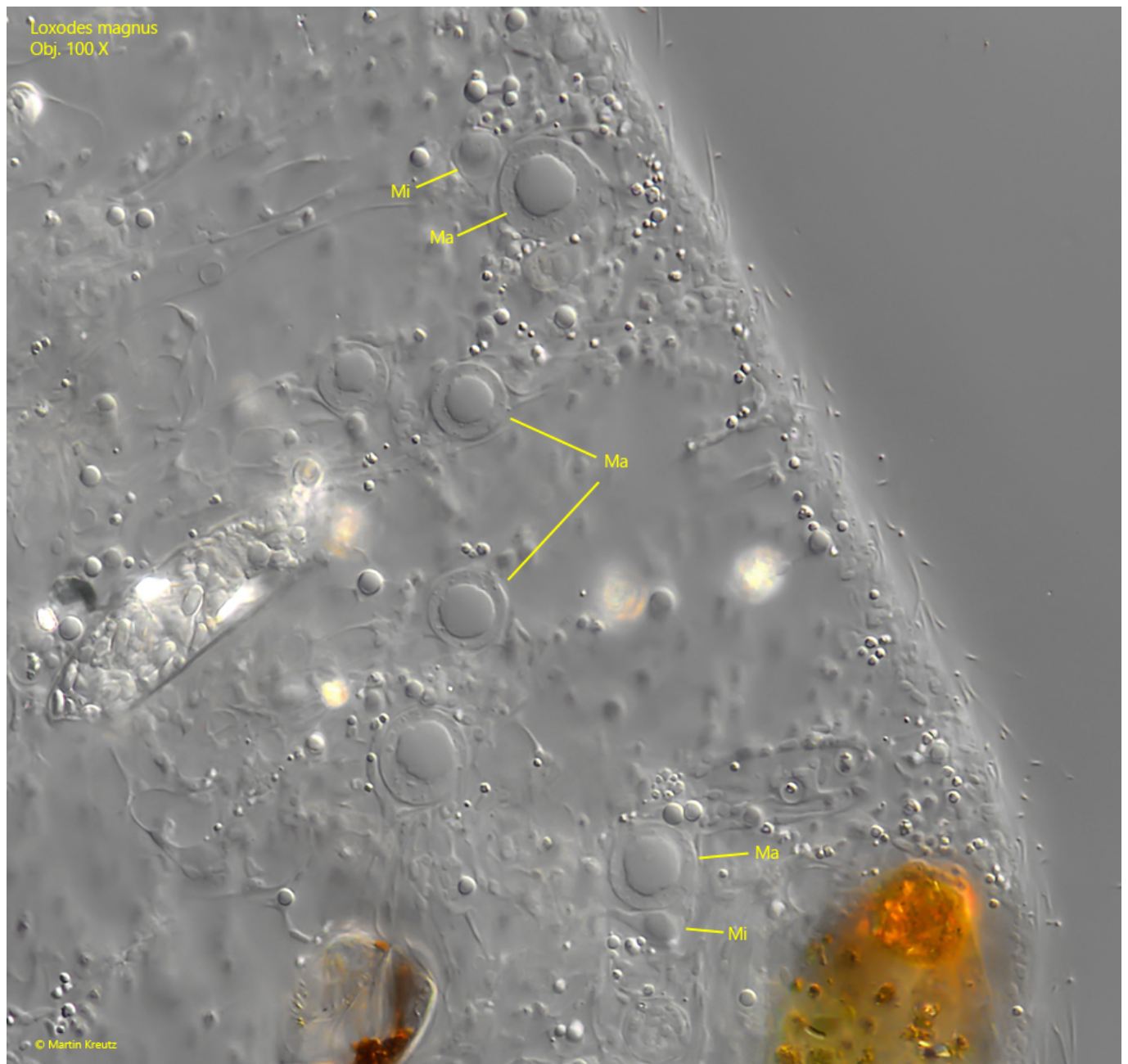


Loxodes magnus  
Obj. 40 X

Ma

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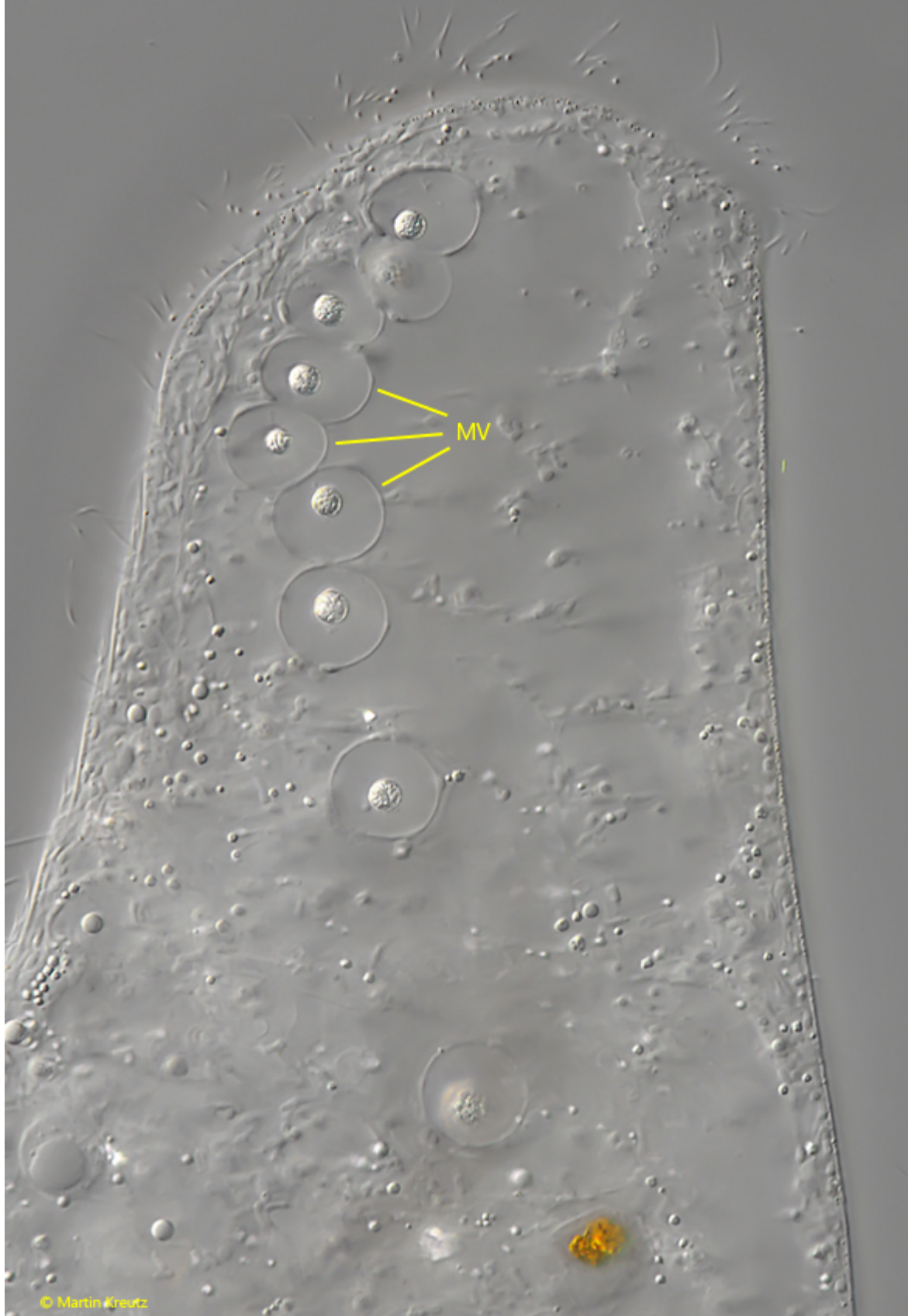
**Fig. 2:** *Loxodes magnus*. L = 504  $\mu$ m. A slightly squashed, transparent specimen. Note the macronuclei (Ma) distributed in the cytoplasm. Obj. 40 X.



**Fig. 3:** *Loxodes magnus*. The macronuclei (Ma) in a strongly squashed specimen. Some of them have micronuclei (Mi) attached. Obj. 100 X.

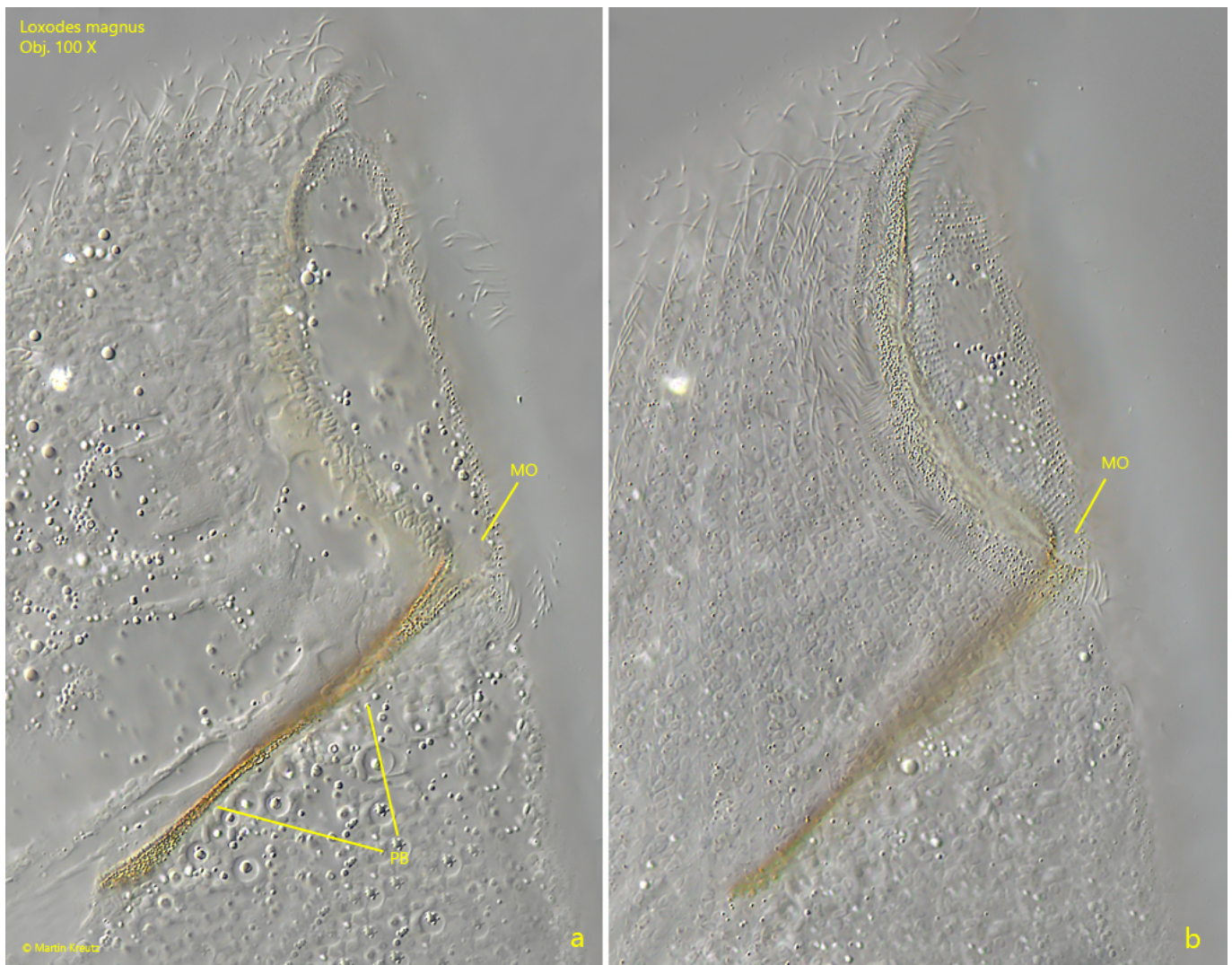


Loxodes magnus  
Obj. 100 X



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**Fig. 4:** *Loxodes magnus*. The anterior end of a specimen from dorsal. The Müller vesicles (MV) are arranged in a row. Obj. 100 X.



**Fig. 5:** *Loxodes magnus*. Two focal planes of the anterior end from right where the mouth opening (MO) is located. The tube covered with brown granules is the pharyngeal basket (PB). Obj. 100 X.





**Fig. 6:** *Loxodes magnus*. I found this curious scene in August 1999. A specimen has phagocytized a nematode with a length of 1400  $\mu\text{m}$ . Half of it was already excreted from the cytopharynx. The whole prey was carried along during swimming. Obj. 4 X.