Heteronema spirale Klebs, 1893

Most likely ID: n.a.

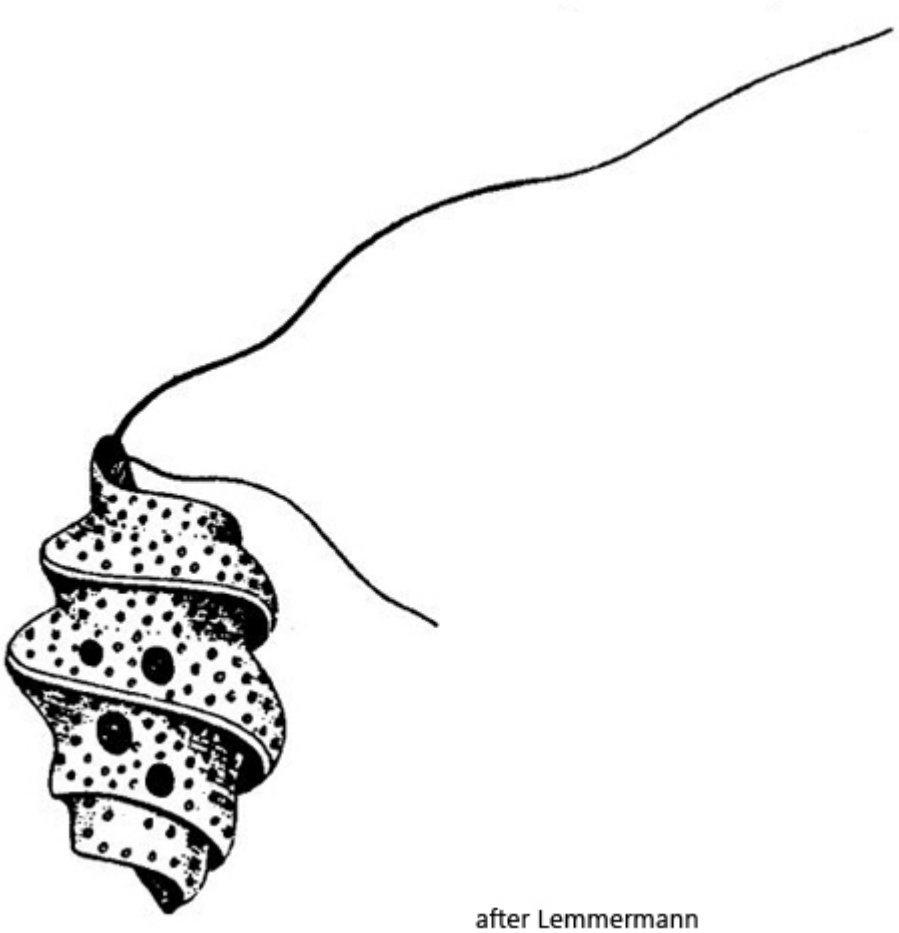
Synonym: *Sphenomonas spiralis*

Sampling location: Simmelried

Phylogenetic tree: *Heteronema spirale*

Diagnosis:

- cell spindle-shaped, spirally twisted with 5–6 counterclockwise turns
- anterior end obliquely truncated
- length 42–62 µm, width 24–30 µm
- leading flagellum about 80 µm long
- trailing flagellum half as long as cell
- periplast smooth
- one contractile vacuole in anterior end
- cell filled with oil droplets and rod-shaped paramylon grains
- sometimes green and yellow remains of ingested algae
- nucleus in the posterior end



after Lemmermann

Heteronema spirale

I find *Heteronema spirale* rarely, but regularly in the Simmelried. Mostly in samples from the upper mud layer. Because of the characteristic shape this euglenoid flagellate is easy to identify. Only *Heteronema trispira* has a similar spiral shape and two flagella. But this species is metabolic, has only 3 turns and is larger (96–130 µm).

According to the description of Lemmermann (1910) the spirally twisted periplast of *Heteronema spirale* is smooth. However, in my population I could see a distinct striation of the pellicle in all specimens I observed (s. figs. 2 a and 3 a). The lengths of the specimens in my population were between 45–65 µm and thus exactly in the range given by Lemmermann. I could also observe the 5–6, counterclockwise twists of the cell in all specimens (s. fig. 1 c). Unfortunately I could only see the long leading flagellum (s. figs. 1 a, 2 b and 3 a). Probably the trailing flagellum lies between the turns attached to the body and is therefore difficult to see.

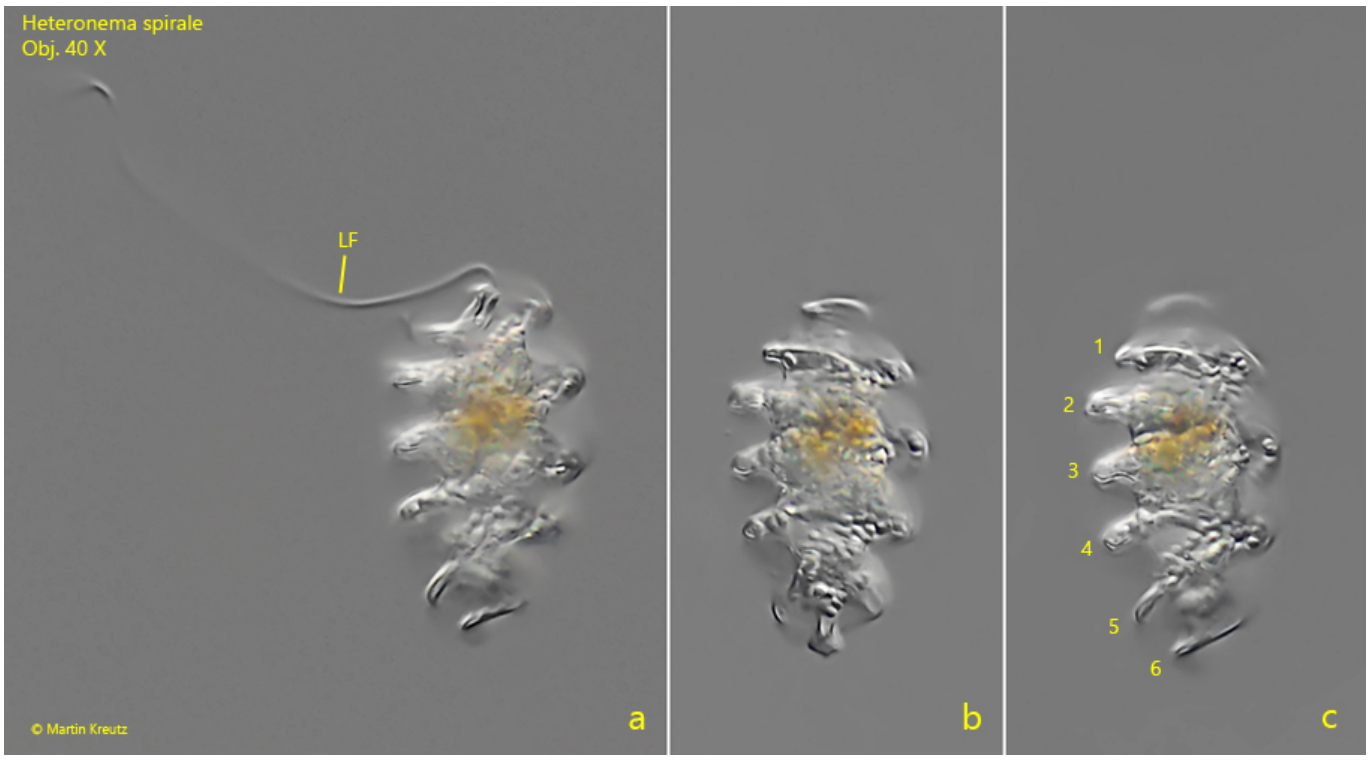


Fig. 1 a-c: *Heteronema spirale*. L = 47 µm. A freely swimming specimen. The cell is spirally twisted with 6 turns (1–6). LF = leading flagellum. Obj. 40 X.

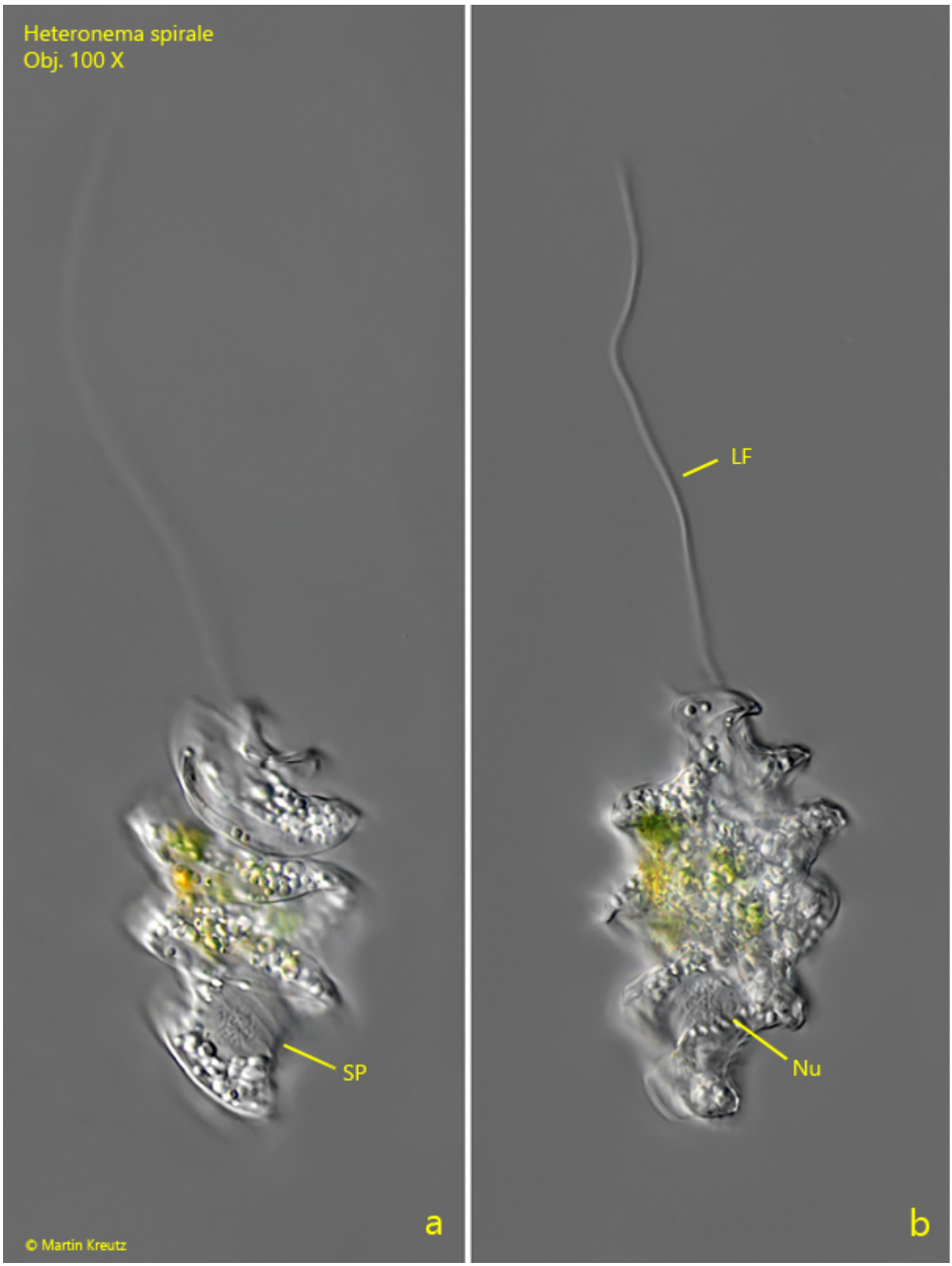


Fig. 2 a-b: *Heteronema spirale*. L = 55 µm. A second, slightly squashed specimen. Note the striation of the pellicle (SP). LF = leading flagellum, Nu = nucleus. Obj. 100 X.

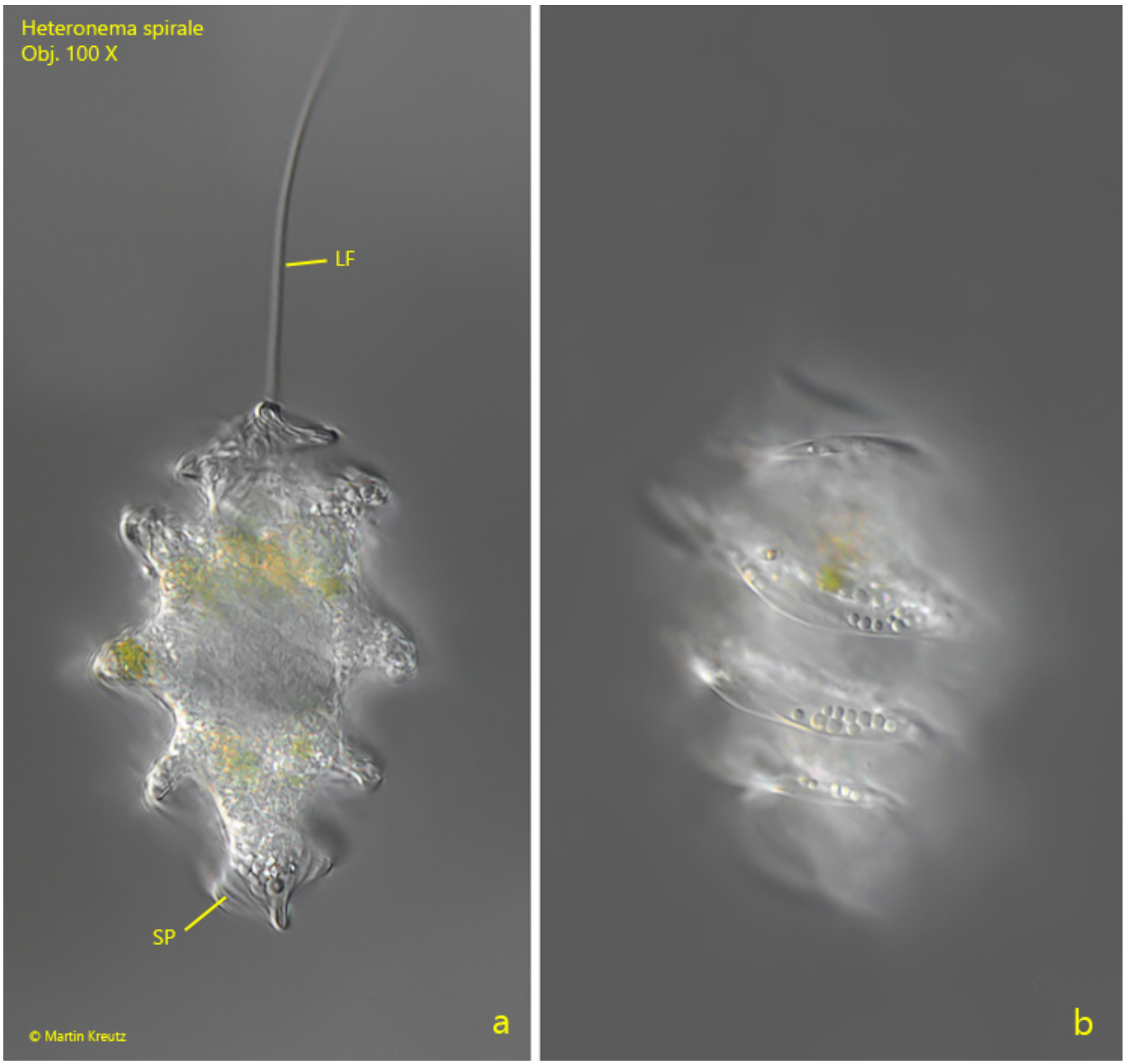


Fig. 3 a-b: *Heteronema spirale*. L = 63 µm. A third, freely swimming specimen. Note that the turns of the body are counterclockwise (b). LF = leading flagellum, SP = striation of the pellicle. Obj. 100 X.