## Phacus lismorensis (Playfair, 1921)

Most likely ID: n.a.

Synonym: Phacus Rostafinskii, Phacus longicauda var. ovalis

Sampling location: Simmelried, Ulmisried

Phylogenetic tree: Phacus lismorensis

## **Diagnosis**:

- cell 85 130 µm long, about 30 µm broad
- longitudinally obvoid in outline, slightly asymmetric
- anterior "lips" overlapping
- narrowing abruptly in a long spine, spine often bent
- pellicle longitudinally striated
- red eyespot prominent
- chloroplast disc shaped
- paramylon in small discs or 1-2 large discs
- flagellum shorter than cell
- pyrenoids absent



Phacus lismorensis

I found the first specimens of *Phacus lismorensis* in 1994 in <u>Simmelried</u> and later also in <u>Ulmisried</u>. In both locations the species is very common. The cells are typically asymmetrically shaped with a rapidly tapering spine. The cells can appear very curved and bent (s. Fig. 3). The shape of the paramylon grains did not seem constant to me. I found specimens its with larger, disc-shaped paramylon as well as those in which it was present in many small discs.



**Fig. 1 a-c:** *Phacus lismorensis.*  $L = 105 \mu m. a)$  a strongly squashed specimen, Obj. 20 X. b) the longitudinal striation of the pellicle, Obj. 100 X. c) The paramylon discs in the squashed specimen, Obj. 100 X.

b



**Fig. 2 a-d:** *Phacus lismorensis.*  $L = 128 \mu m$ . A slightly squashed specimen. Chl = disc shaped chloroplasts, ES = eye spot, NU = nucleus, PA = disc shaped paramylon granules. Obj. 100 X.



**Fig. 3 a-c:** *Phacus lismorensis.*  $L = 105 \mu m. a$ , b) a strongly bent specimen. c) the same specimen strongly squashed. Obj. 100 X.

In many samples I found infestation of *Phacus lismorensis* by a parasitic fungus. In most cases it was only one very large parasitic cell, which was intracellular (s. Fig. 4). Sometimes there were even two parasitic cells. Reddish-brown metabolites were deposited in these cells and after prolonged infestation, the paramylon granules were completely degraded to feed the parasite. Unfortunately, I could not observe the complete life cycle of the parasitic fungus.



**Fig. 1 a-c:** *Phacus lismorensis.*  $L = 88 \mu m$ . A specimen that has been attacked by a parasitic fungus. PC = parasitic cell, NuP = nucleus of the parasitic cell. Obj. 100 X.