

## ***Colacium vesiculosum* Ehrenberg, 1834**

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

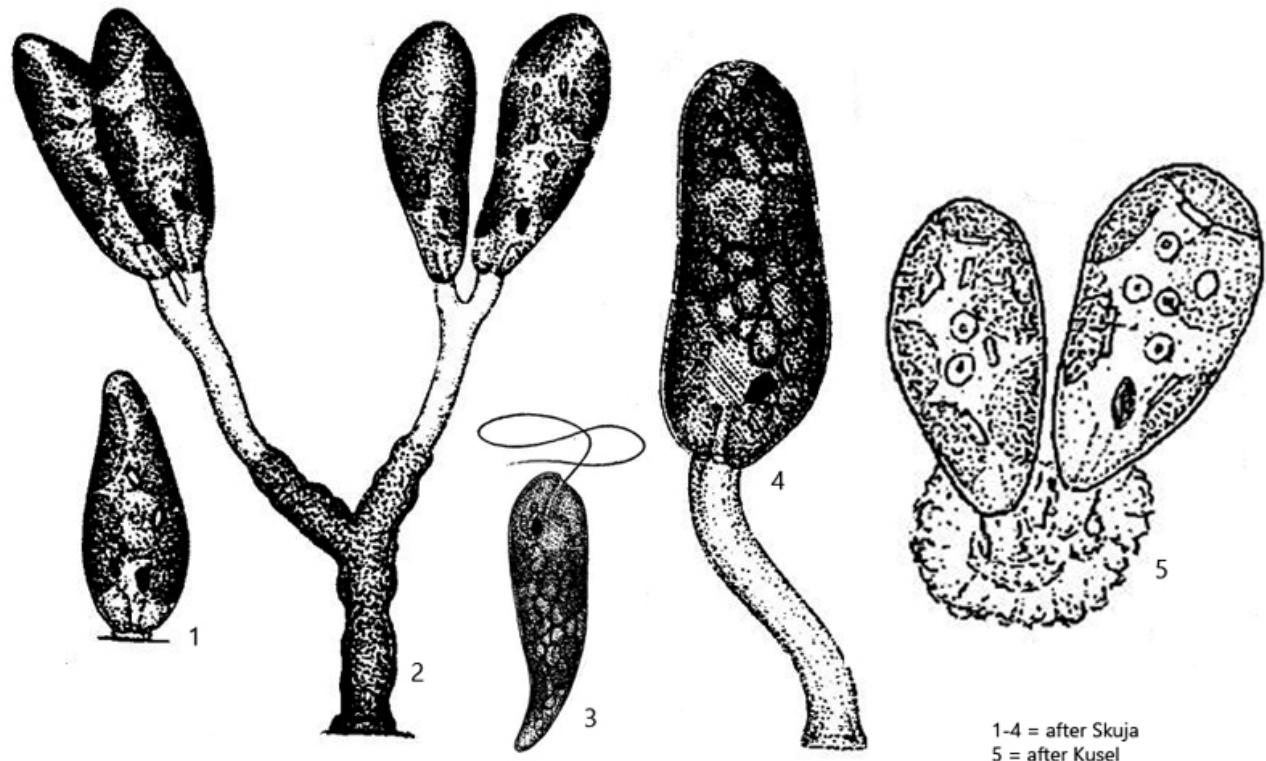
**Synonym:** n.a.

**Sampling location:** [Pond of the convent Hegne](#)

**Phylogenetic tree:** [\*Colacium vesiculosum\*](#)

**Diagnosis:**

- sessile cells ovoid, ellipsoid or pear-shaped
- length 18–28 µm
- 4–8 parietal, disc-shaped chloroplasts
- each chloroplast with a lenticular pyrenoid
- pyrenoid below chloroplast
- cells on branched gelatinous stalks
- growing as sessile colonies on planktonic crustaceans and rotifers
- pellicle with fine striation, counterclockwise
- motile cells with one flagellum of body length
- one eyespot
- one contractile vacuole



### Colacium vesiculosum

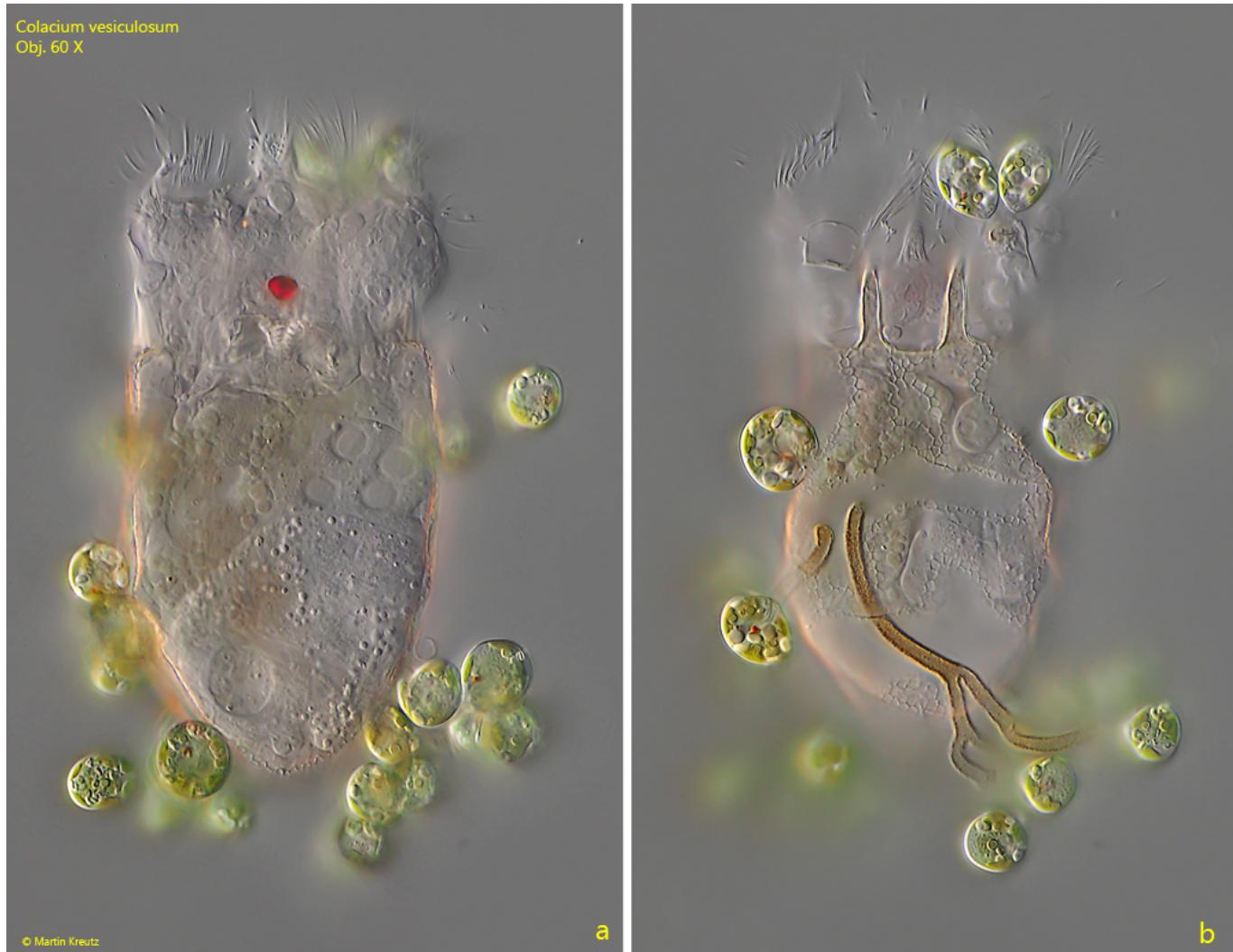
*Colacium vesiculosum* usually settles on planktonic crustaceans and rotifers. So far I have found *Colacium vesiculosum* almost exclusively on rotifers with a rigid lorica, such as *Keratella*, *Polyarthra* or *Anuraeopsis* (s. figs. 1 a-b, 2 a-c and 4 a-b).

*Colacium vesiculosum* forms a colorless, gelatinous stalk after attachment. The stalk branches with each cell division. This gives rise to tree-like colonies of 2-16 specimens. I have not yet been able to detect larger colonies. I have also observed that the gelatinous stalks turn orange-brown after a short time due to the deposition of iron compounds (s. fig. 3).

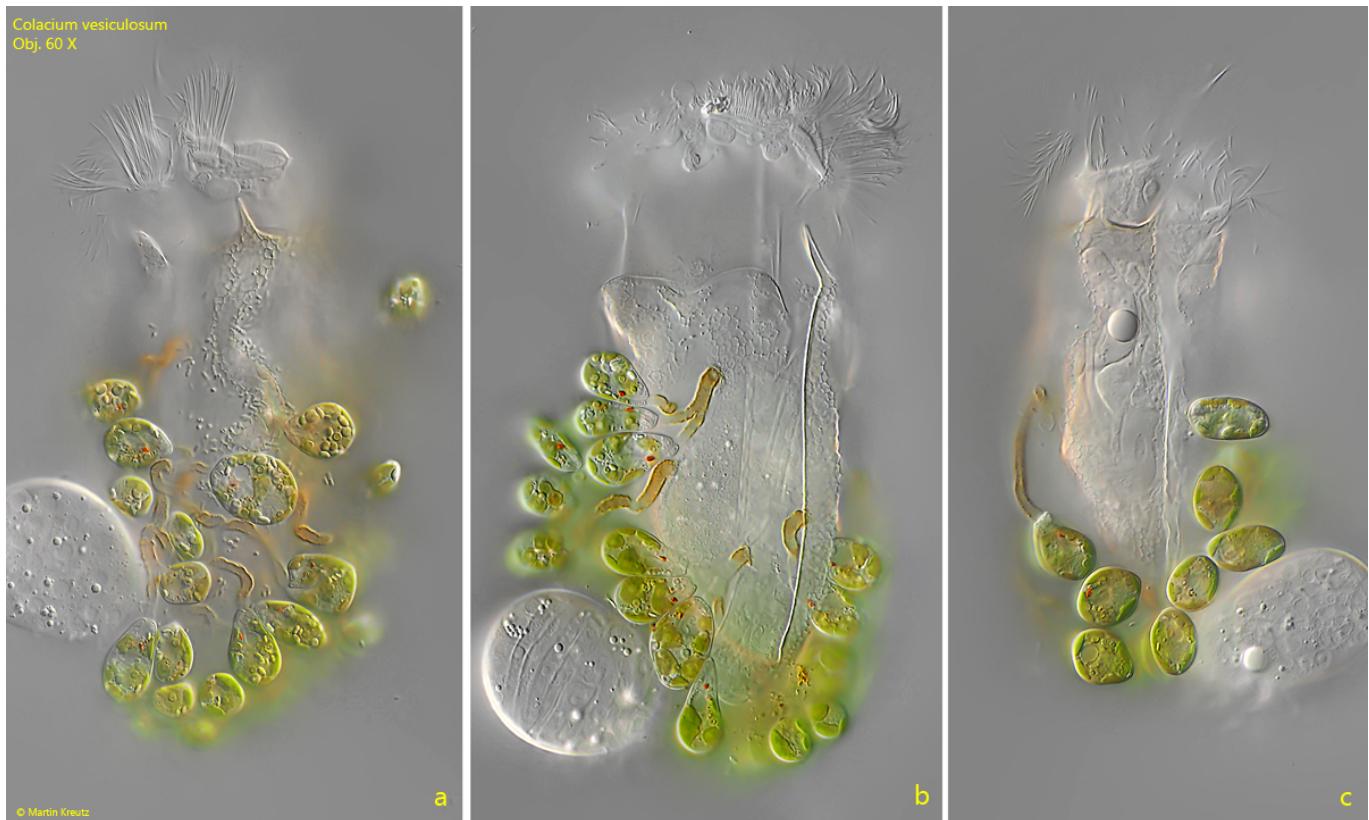
The sessile cells are usually oval, pear-shaped or spherical. The distal end is never pointed. Characteristic are the somewhat irregularly shaped, disc-shaped chloroplasts, each of which has a pyrenoid, which is always located on the underside (s. fig. 6 c). The cells can form a flagellum and detach from the stalk. These motile cells resemble *Euglena* and are more or less cylindrical. The posterior end is usually slightly thickened and rounded.

Stein (1878) described the similar species *Colacium arbuscula*. However, the characteristics are practically identical to those of *Colacium vesiculosum*, except

that the stalks are said to have more branching. Huber-Pestalozzi (1955) regarded it as a subspecies of *Colacium vesiculosum* (*Colacium vesiculosum* var. *arbuscula*) and Skuja (1948) considers *Colacium arbuscula* to be only an older developmental stage of *Colacium vesiculosum*, in which more cell divisions have taken place, resulting in larger, branched colonies. I agree with this view.



**Fig. 1 a-b:** *Colacium vesiculosum*. L = 16–18  $\mu\text{m}$  (of cells). Two focal planes of the rotifer *Keratella cochlearis*, on which several colonies have settled on branched stalks. Obj. 60 X.

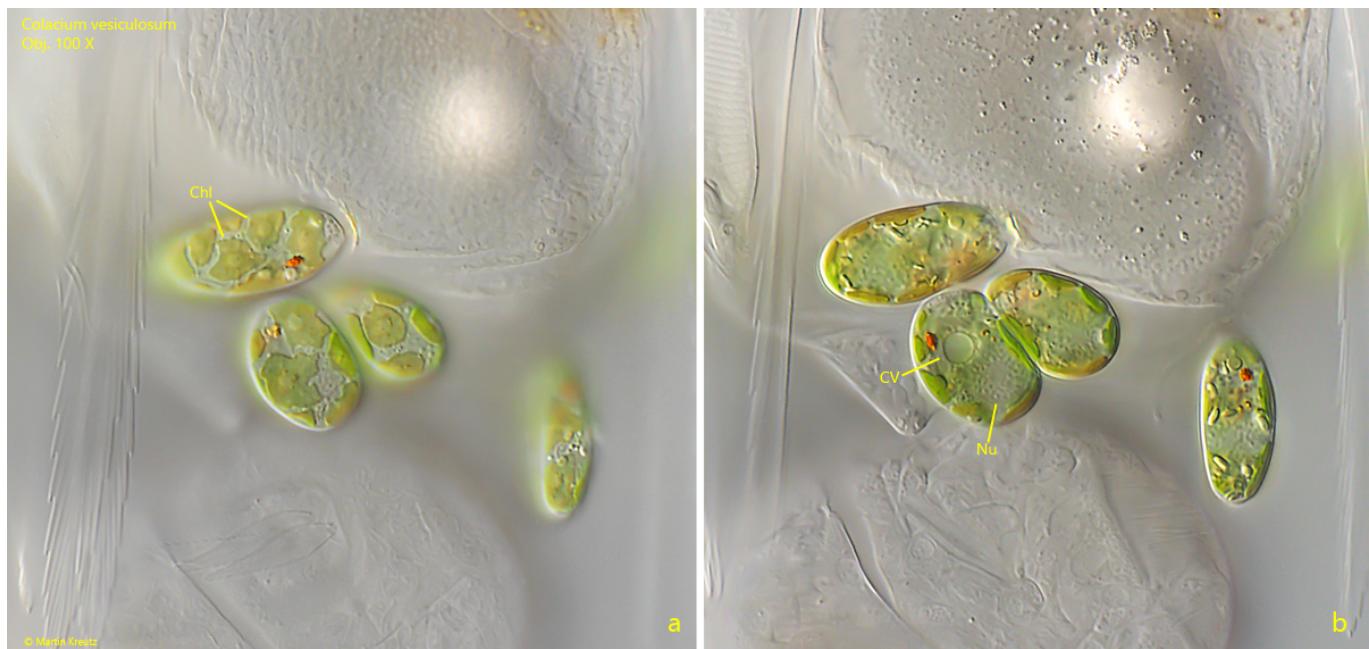


**Fig. 2 a-c:** *Colacium vesiculosum*. L = 18-21  $\mu\text{m}$  (of cells). Several colonies with branched stalks on three different specimens of the rotifer *Keratella cochlearis*. Obj. 60 X.

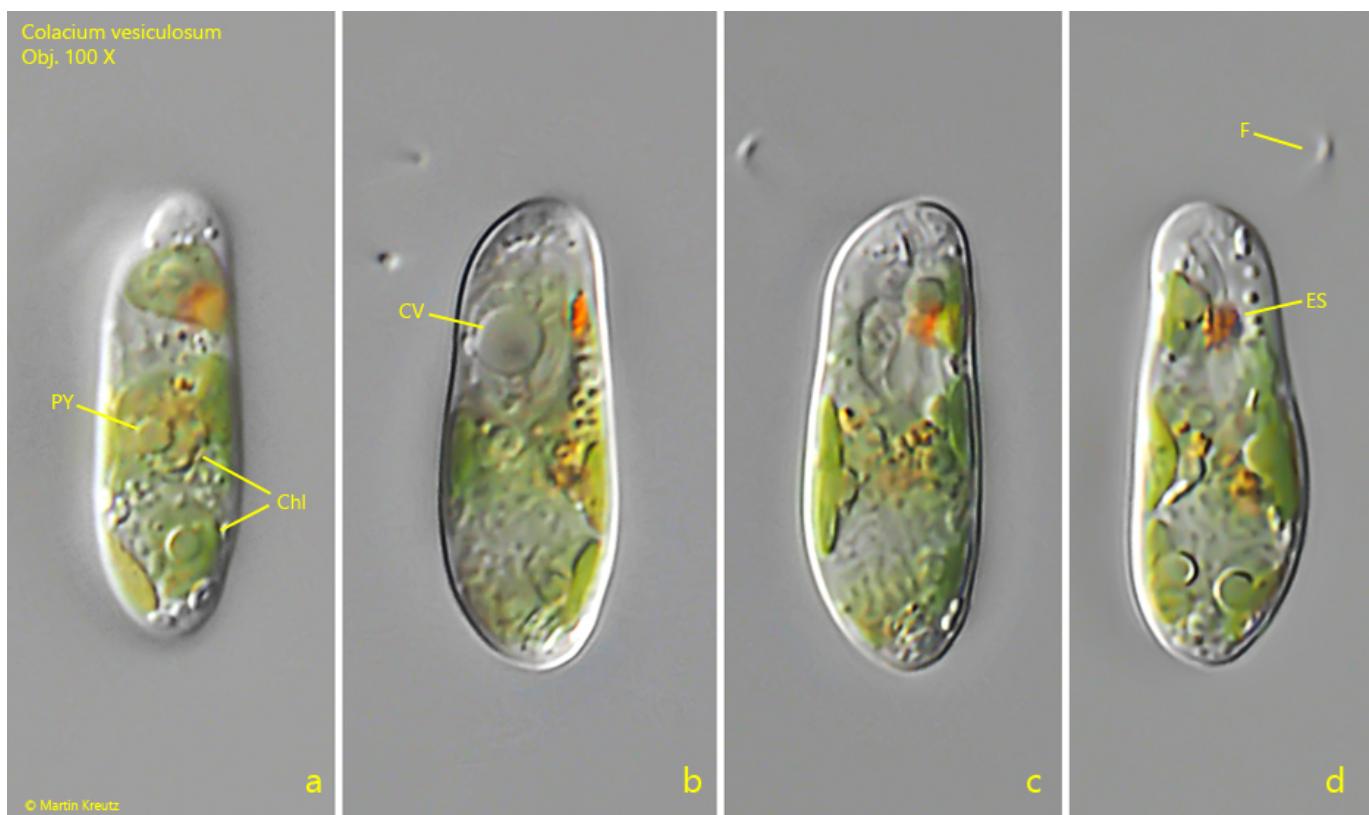
*Colacium vesiculosum*  
Obj. 100 X



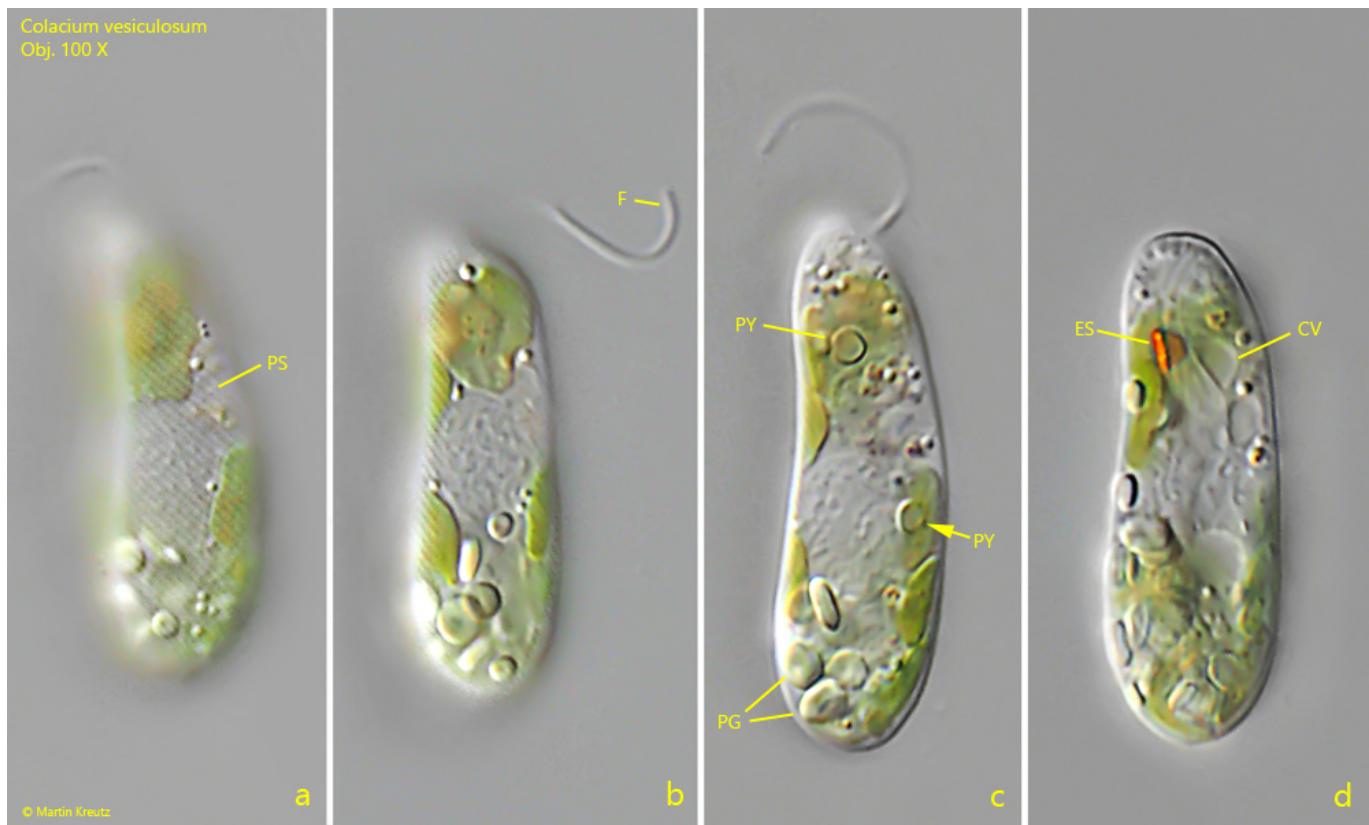
**Fig. 3:** *Colacium vesiculosum*. L = 18-21  $\mu\text{m}$  (of cells). The colonies as shown in fig. 1 b in detail. Note the discoloration to orange-brown of the gelatinous stalks after excretion by the cell due to the deposition of iron salts (arrows). Obj. 100 X.



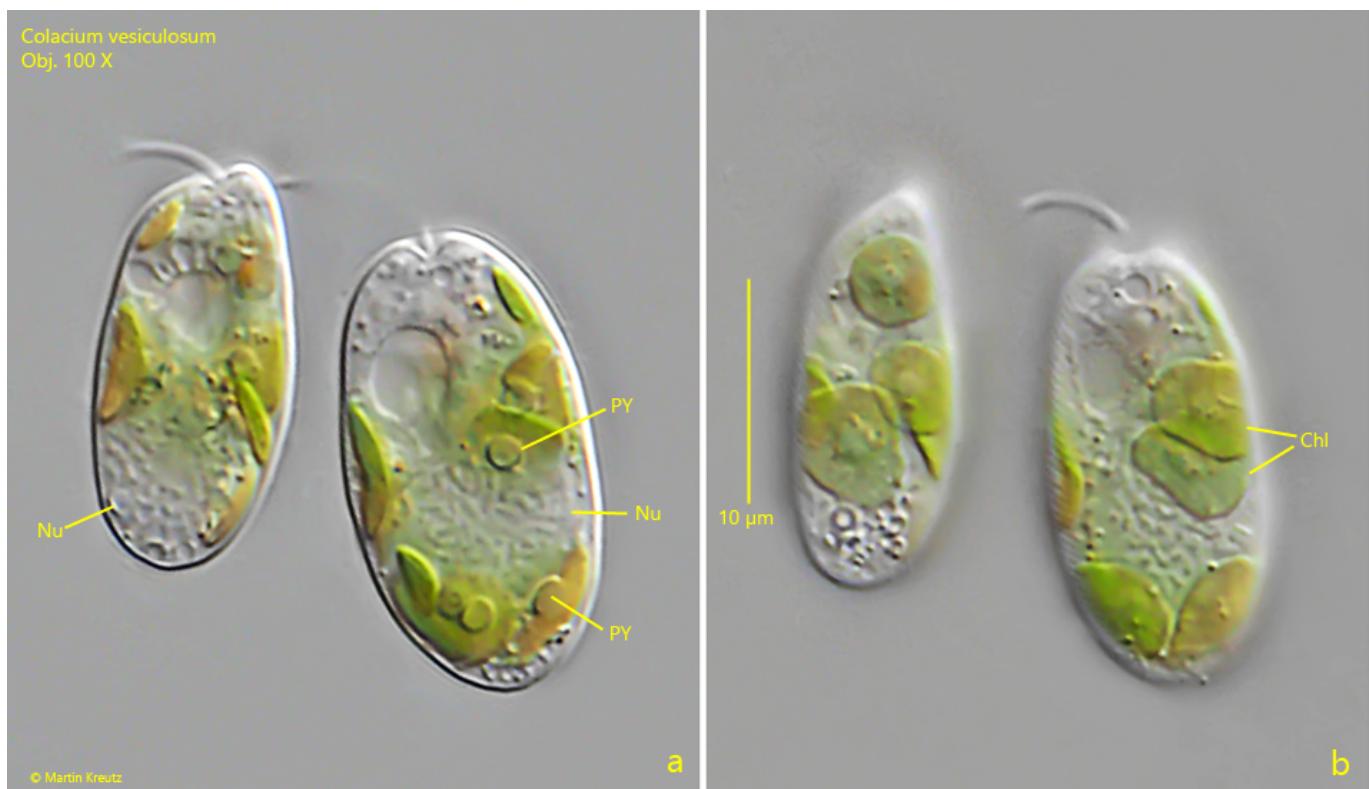
**Fig. 4 a-b:** *Colacium vesiculosum*. L = 18-21  $\mu\text{m}$  (of cells). Some cells have settled on the rotifer *Polyarthra vulgaris* and start to build a stalk. Chl = chloroplasts, CV = contractile vacuole, Nu = nucleus. Obj. 100 X.



**Fig. 5 a-d:** *Colacium vesiculosum*. L = 21  $\mu\text{m}$ . A freely swimming, detached specimen. Chl = chloroplast, CV = contractile vacuole, ES = eyespot, F = flagellum, PY = pyrenoid. Obj. 100 X.



**Fig. 6 a-d:** *Colacium vesiculosum*. L = 27  $\mu$ m. A second freely swimming, detached specimen. Note the fine striation of the pellicle (PS) and the pyrenoid below the chloroplast (PY, arrow). Chl = chloroplast, CV = contractile vacuole, ES = eyespot, F = flagellum, PG = paramylon grains. Obj. 100 X.



**Fig. 7 a-b:** *Colacium vesiculosum*. Two focal planes of two squashed specimens.

Note the disc-shaped chloroplasts (Chl). CV = contractile vacuole, Nu = nucleus.  
Obj. 100 X.