Phacus gigas Cunha, 1913

Most likely ID: n.a.

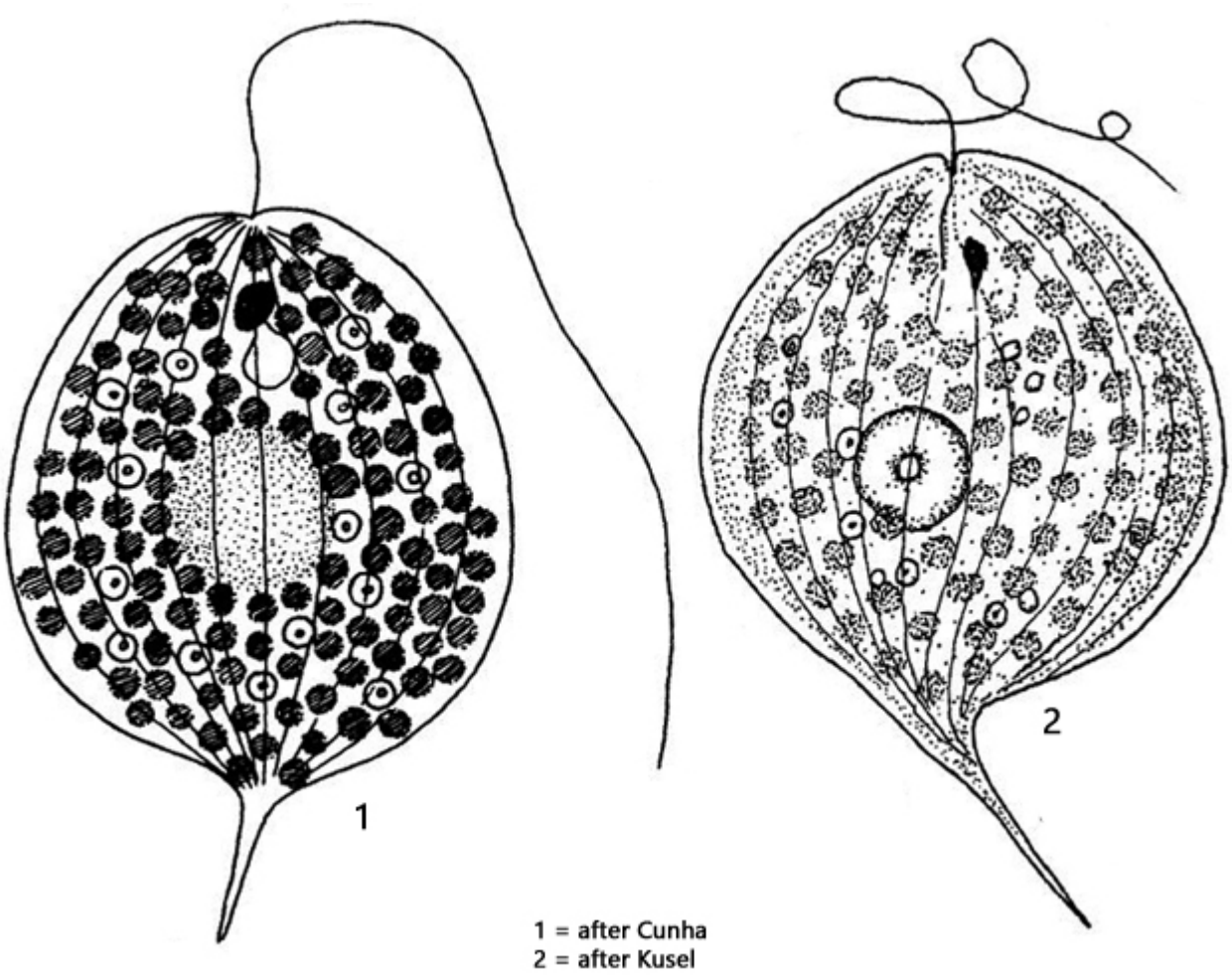
Synonym: n.a.

Sampling location: Simmelried, Mainau pond, Dorfteich Kloster (Hiddensee)

Phylogenetic tree: *Phacus gigas*

Diagnosis:

- cell broadly ovoid, strongly flattened
- dorsal keel absent
- length 80–120 µm, width about 44–80 µm
- terminal spine set oblique, about 20 µm long
- numerous, disc-shaped chloroplasts
- margin of the cell transparent
- one flagellum, about body length
- stigma large
- centrally one large paramylon grain
- small paramylon grains disc-shaped
- nucleus oval or spherical, central
- striation of the pellicle longitudinally



Phacus gigas

I regularly find *Phacus gigas* in the Simmelried, where the species is very common. The only other sites I know of are the Mainau pond and the Dorfteich in the village of Kloster on the island Hiddensee.

Phacus gigas can be easily identified by the size of the cells, which often reach a length of over 100 µm.
In my population, the cells were often 10 % larger than stated in the literature. The cells are strongly flattened (s. fig. 2 c), with the terminal spine bent to the side as well as to the ventral side. The cell has no dorsal keel, as is the case with *Phacus pleuronectes*, for example. In the center of the cells is the granular nucleus and underneath is often a large, flat paramylon grain (s. fig. 4). The smaller paramylon grains are disc-shaped and often have a hole in the middle. They are grouped around the central, large paramylon grain. The striation of the pellicle is wide and only weakly developed (s. fig. 3 a). The cells quickly shed the flagellum under coverslip pressure.

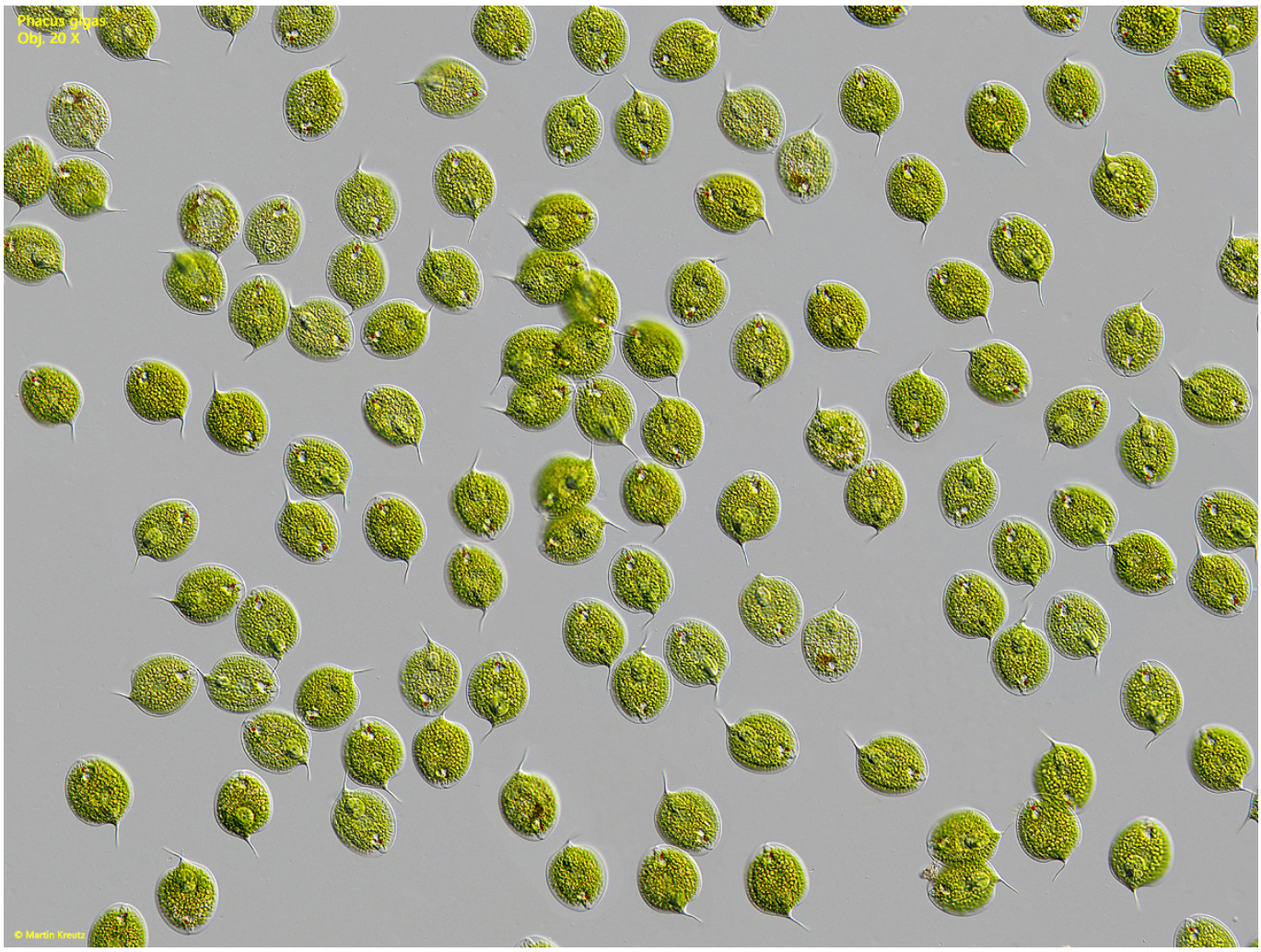


Fig. 1: *Phacus gigas*. Mass development found in the Dorfteich of the village Kloster on the island Hiddensee in October 2024. Obj. 20 X.

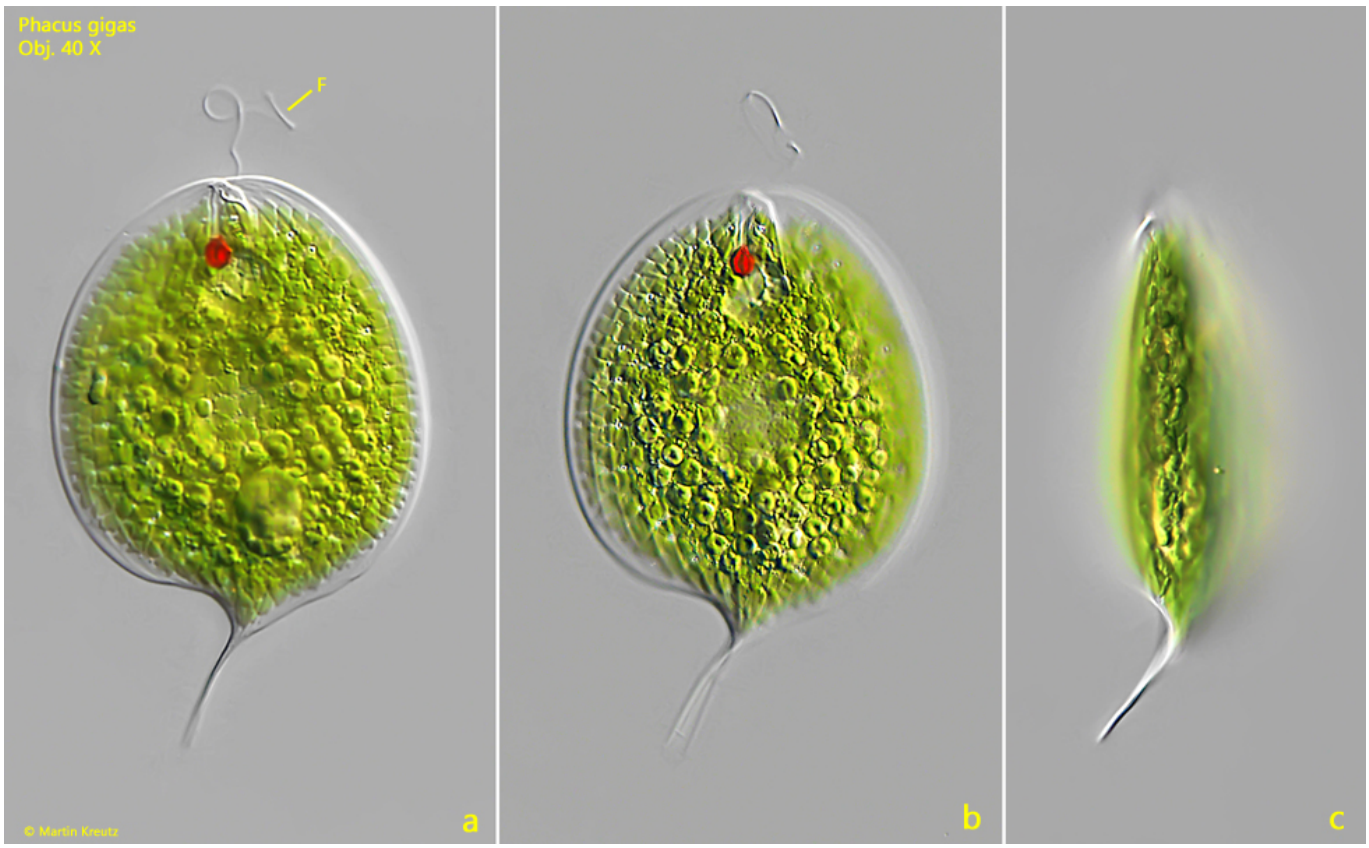


Fig. 2 a-c: *Phacus gigas*. L = 127 µm (with spine). A freely swimming specimen from dorsal (a, b) and from left (C). The cell is strongly flattened and the spine is bent ventrally. Obj. 40 X.

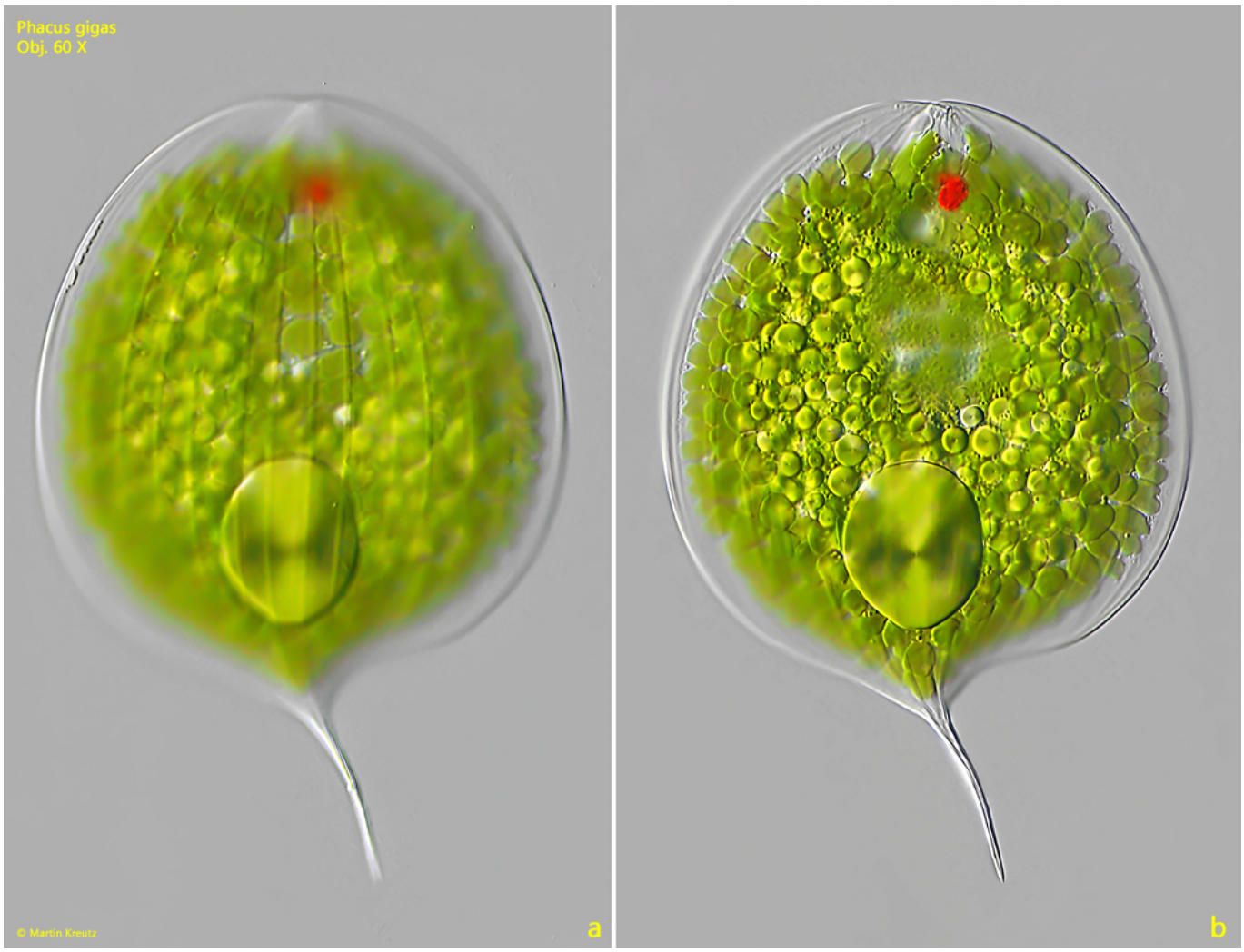


Fig. 3 a-b: *Phacus gigas*. L = 134 µm (with spine). Two focal planes of the slightly squashed specimen from ventral. Obj. 60 X.

Fig. 4: *Phacus gigas*. L = 133 µm (with spine). Focal plane on the central nucleus (Nu). Note the large, central paramylon grain (CP). CV = contractile vacuole, ES =

eyespot. Obj. 100 X.

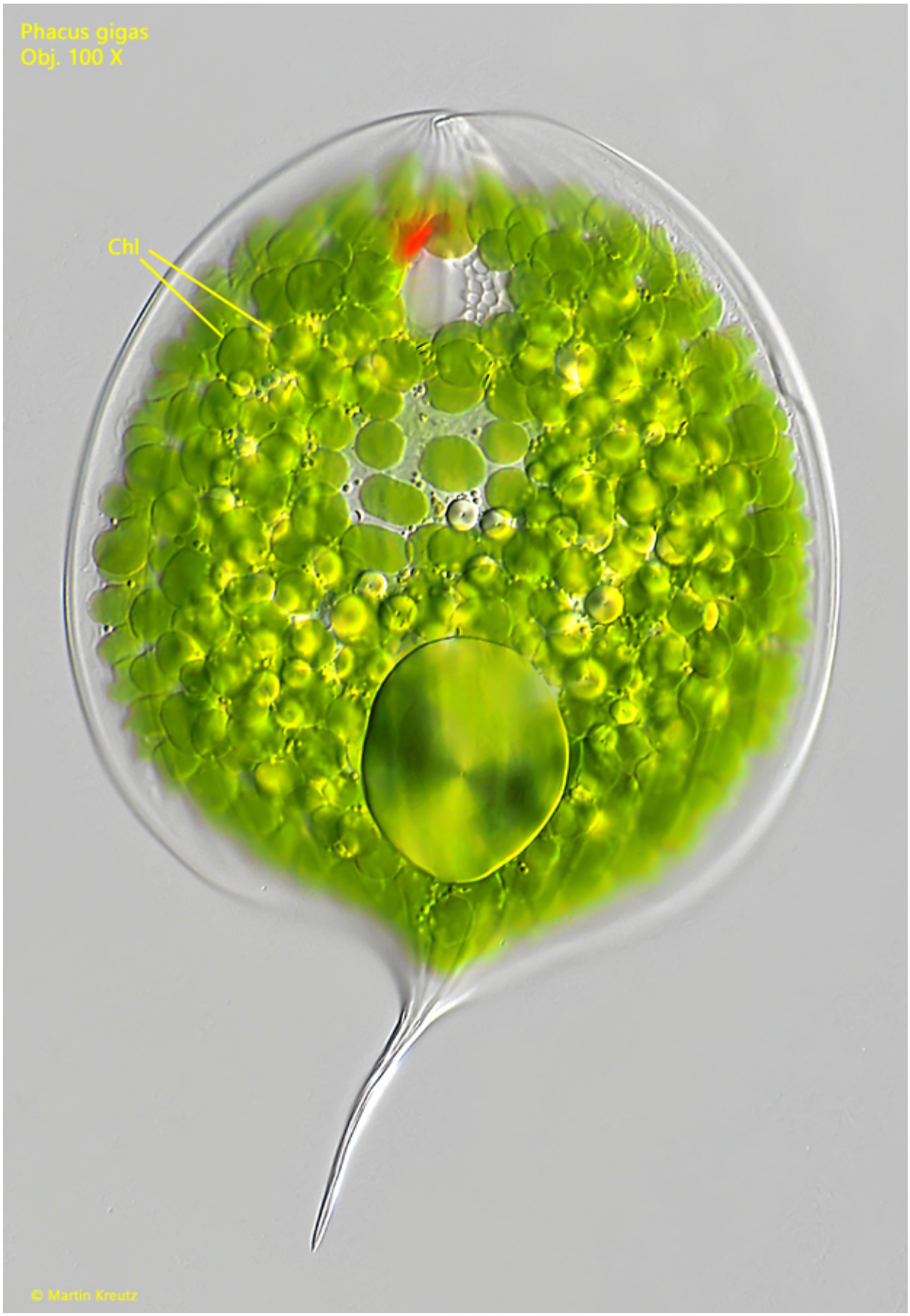


Fig. 5: *Phacus gigas*. L = 133 µm (with spine). The same specimen as shown in fig. 4 with focal plane on the disc-shaped chloroplasts (Chl). Obj. 100 X.