Spathidium chlorelligerum Kahl, 1930

Most likely ID: n.a.

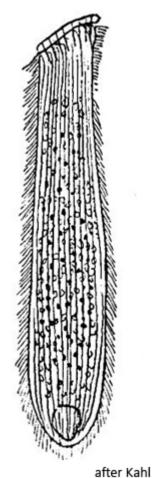
Synonym: n.a.

Sampling location: Simmelried

Phylogenetic tree: Spathidium chlorelligerum

Diagnosis:

- body narrowly spatulate, anterior half laterally flattened
- length 200-300 μm
- dorsal brush with long bristles
- contractile vacuole terminal
- extrusomes curved rods, 10-12 μm long
- 50-100 scattered macronucleus nodules
- cytoplasm colored green due to symbiotic algae



Spathidium chlorelligerum

I have only found *Spathidium clorelligerum* three times in 2003, 2010 and most recently in 2024. In the first two cases, these were single specimens, while in July 2024 I was able to observe a mass development of about 20 specimens/ml. All specimens came from the <u>Simmelried</u>.

The only available description of *Spathidium clorelligerum* is by Kahl (1930), but it is very short. In my population I was able to find deviations from Kahl's description. In the specimens I examined, the macronucleus was always a sausage-shaped or filiform strand with a length of $100-200~\mu m$ (s. fig. 3). At high magnification it could also be seen that this strand has several short branches (s. fig. 4). I was unable to find specimens with 50-100 scattered nodules, as described by Kahl.

The spherical micronuclei are very small (diameter 1.5 μ m) and are attached to the macronucleus (s. fig. 5). They are difficult to recognize. The extrusomes are slightly curved rods with a length of 11.4–11.7 μ m, which corresponds to Kahl's description (s. fig. 6). The dorsal brush reaches about one third of the body length. The bristles have a maximum

length of 8-9 μm (s. fig. 2).

The symbiotic algae are described by Kahl as "very small". In my population they were algae of the Chlorella type with a cup-shaped chloroplast and their own nucleus (s. fig. 7). They had a diameter of 5-6 μ m, which is a common diameter of symbiotic algae in other species as well.

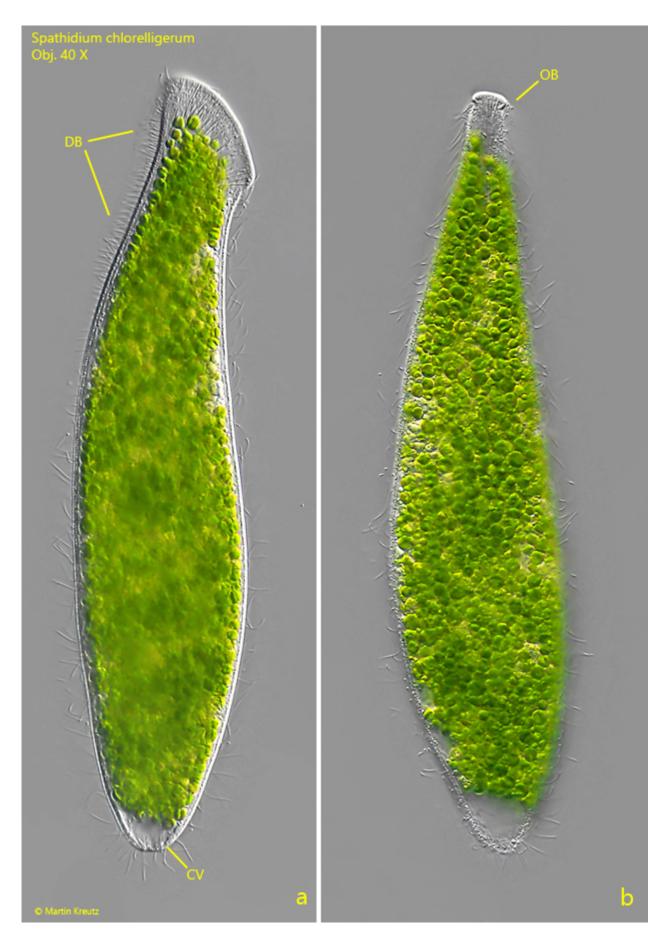


Fig. 1 a-b: Spathidium chlorelligerum. $L=250~\mu m$. A freely swimming specimen from right (a) and in ventral view (b). CV= contractile vacuole, DB= dorsal brush, OB= oral bulge.

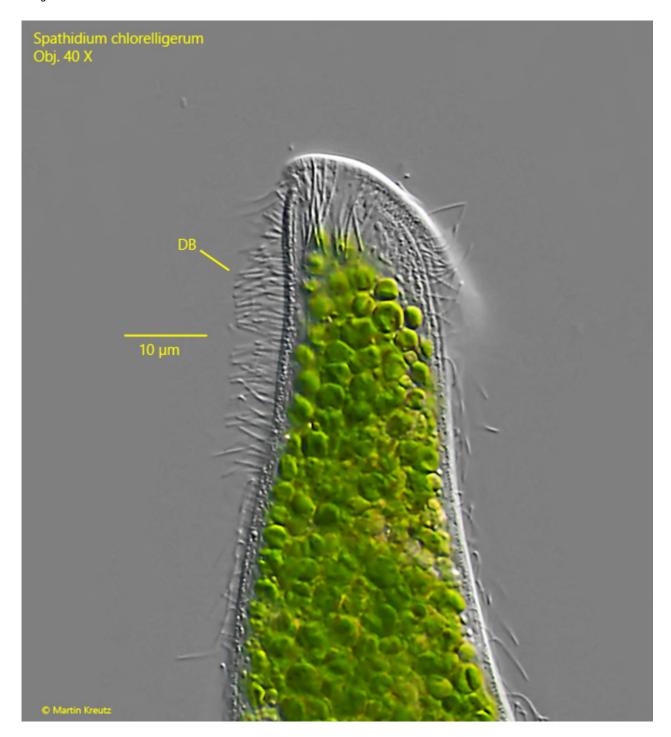


Fig. 2: Spathidium chlorelligerum. The bristles of the dorsal brush (DB) have a length of 8-9 μm. Obj. 40 X.

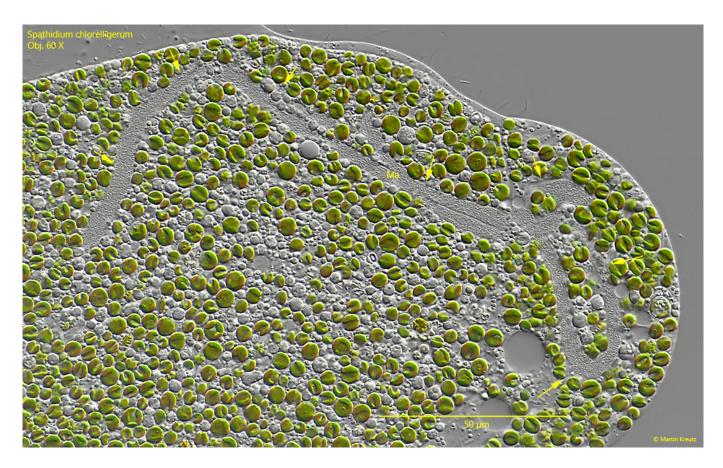


Fig. 3: Spathidium chlorelligerum. In a squashed specimen the macronucleus (Ma) with the shape of a filiform strand becomes visible (s. arrows). The macronucleus has a length of about 150 μm . Obj. 60 X.

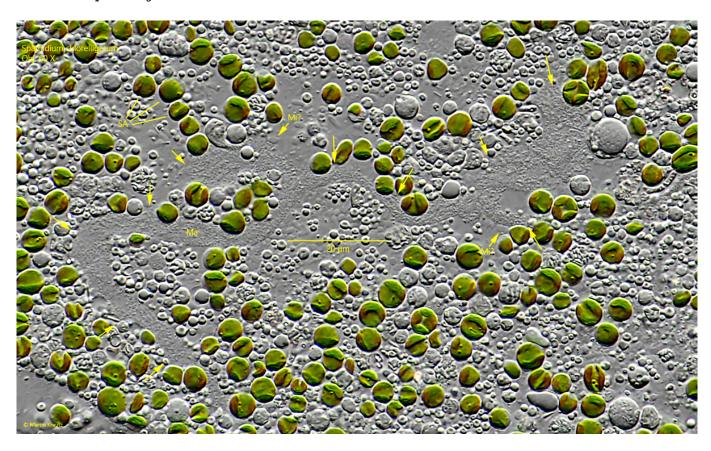


Fig. 4: Spathidium chlorelligerum. In a more squashed specimen it is visible that the macronucleus (Ma) is branched in some places with short extensions (arrows). Mi? = probably micronuclei, SA = symbiotic algae. Obj. 60 X.

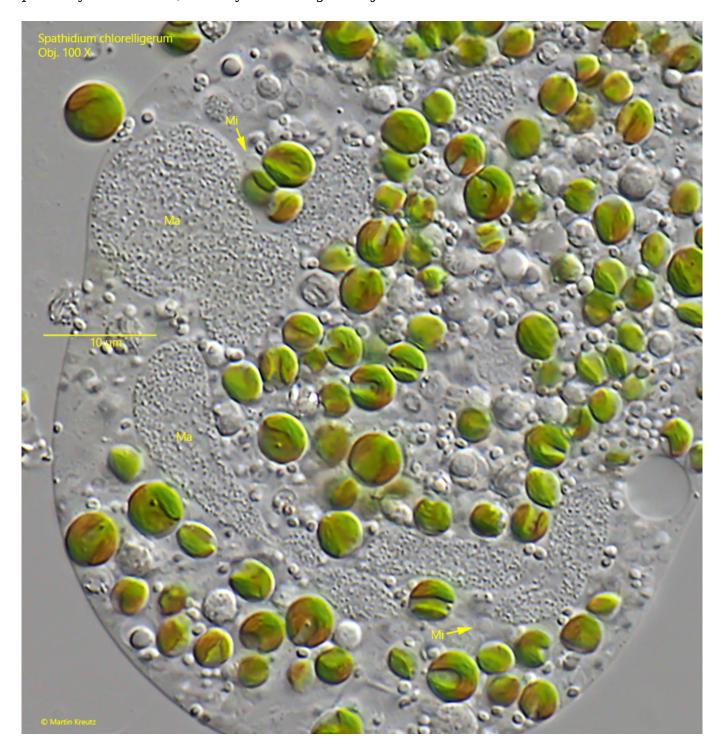


Fig. 5: Spathidium chlorelligerum. A detail of the macronucleus with small, adjacent micronuclei (Mi). The spherical micronuclei have a diameter of 1.5 μm . Obj. 100 X.

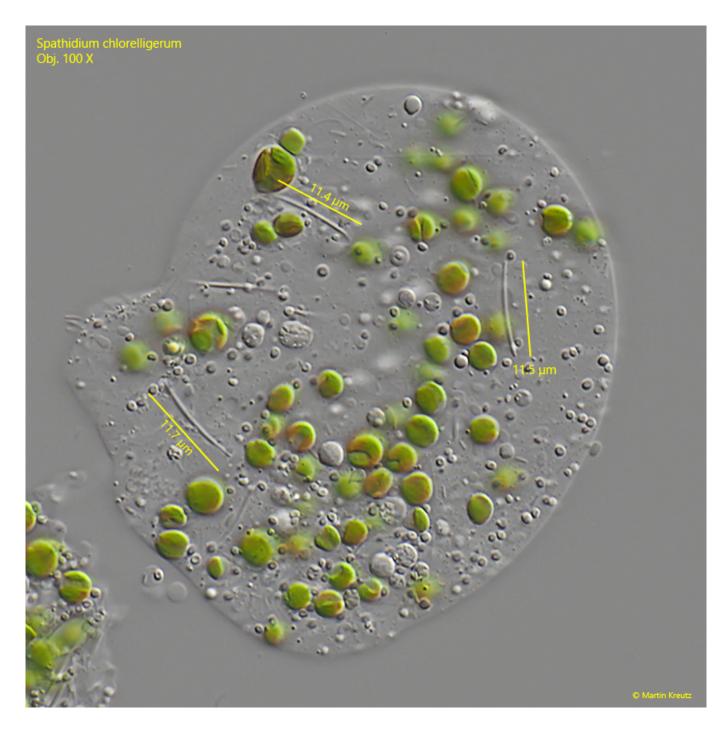


Fig. 6: Spathidium chlorelligerum. The extrusomes are slightly curved rods with a length of 11.4-11.7 μm. Obj. 100 X.

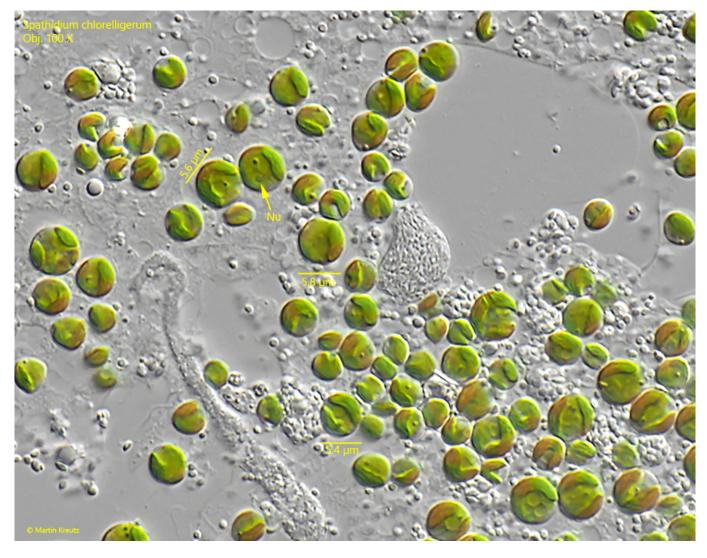


Fig. 7: Spathidium chlorelligerum. The symbiotic algae are from the Chlorella type with a cup-shaped chloroplast without pyrenoid. The spherical cells have a diameter of 5.4–5.8 $\mu m.$ Each alga cell has an own nucleus (Nu). Obj. 100 X.