

## ***Acanthocystis turfacea* Carter, 1863**

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

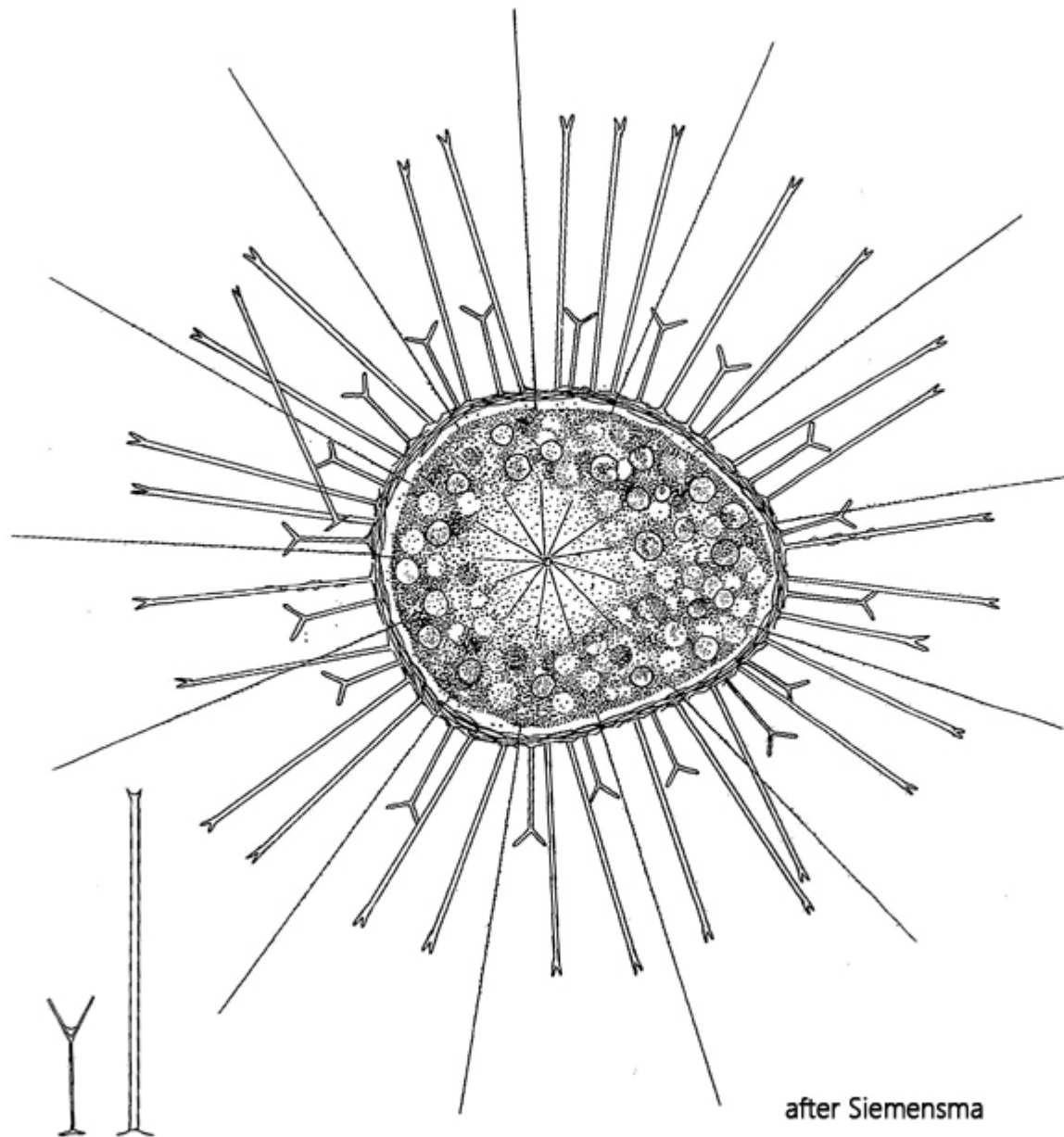
**Synonym:** n.a.

**Sampling location:** [Ulmisried](#), [Bussenried](#), [Bündlisried](#), [Mainau pond](#), [Purren pond](#), [Pond of the convent Hegne](#), [Simmelried](#)

**Phylogenetic tree:** [Acanthocystis turfacea](#)

### **Diagnosis:**

- cell spherical, 60–90 µm in diameter
- cytoplasm often filled with symbiotic algae, sometimes absent
- cell covered with oval tangential scales (1.9–5.5 X 3.7–12 µm)
- radial scales type 1 spines (12–65 µm) with two teeth at distal end and basal plate
- radial scales type 2 spines (3–15 µm) with Y-shaped distal end and basal plate
- symbiotic algae are from *Chorella* type
- nucleus located eccentric, shape variable
- centroplast located central



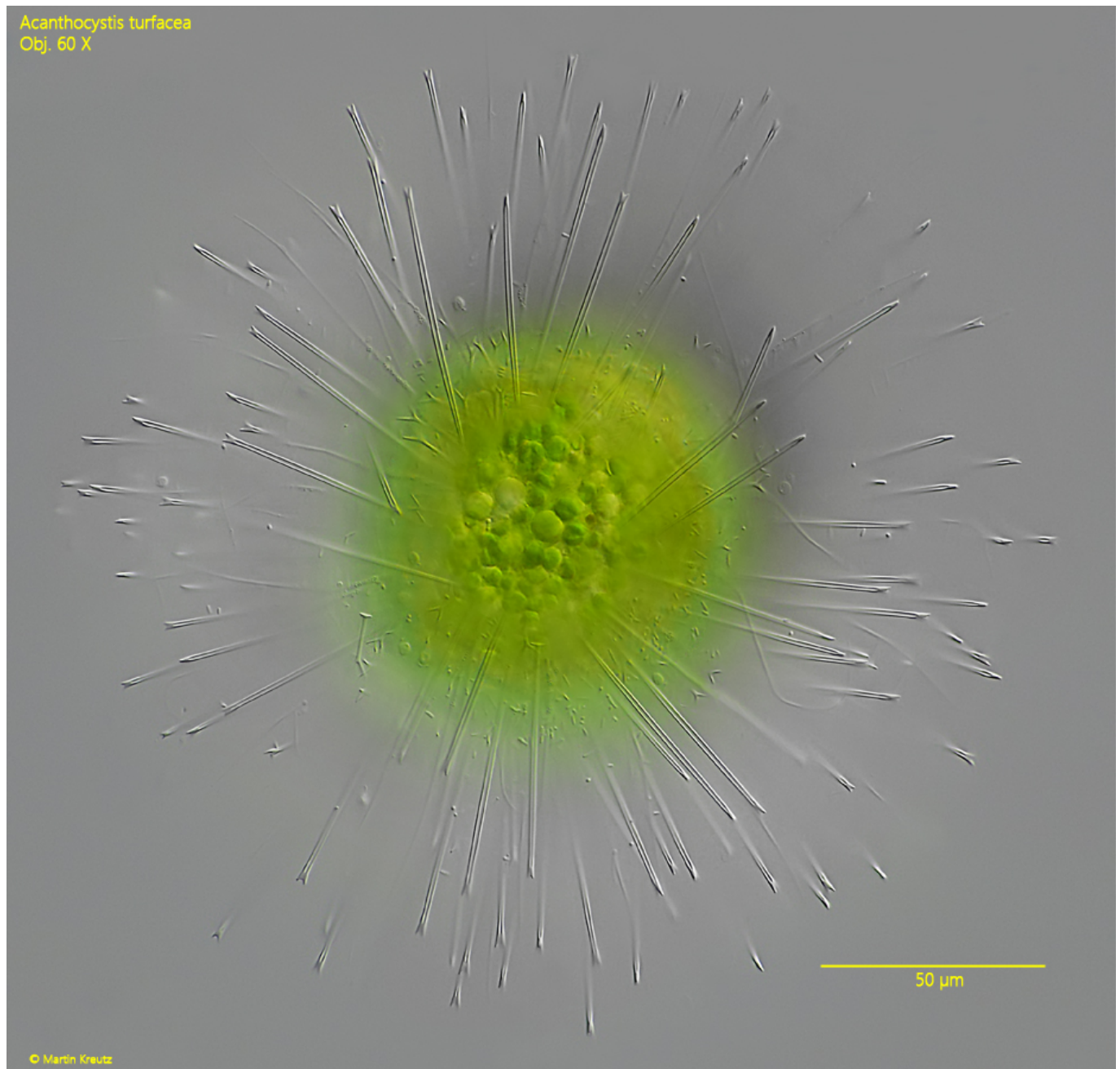
*Acanthocystis turfacea*

*Acanthocystis turfacea* is a very common centrohelid Helizoan and I find this species in almost all my sampling sites. In old samples with little plant material there are often many specimens at the bottom of the jars.

*Acanthocystis turfacea* can easily be recognized by the large and conspicuous radial scales. These are spine-shaped. While the long radial spines of type 1 have only two short teeth at the distal end, the radial spines of type 2 are split in a Y-shape at the distal end (s. figs. 4 and 5). In addition to these radial scales, *Acanthocystis turfacea* also has oval, tangential scales covering the protoplast. However, I have not yet been able to recognize these exactly. In most cases, the specimens of *Acanthocystis turfacea* are clearly green due to symbiotic algae. According to my investigations, these are spherical algae with a bell-shaped

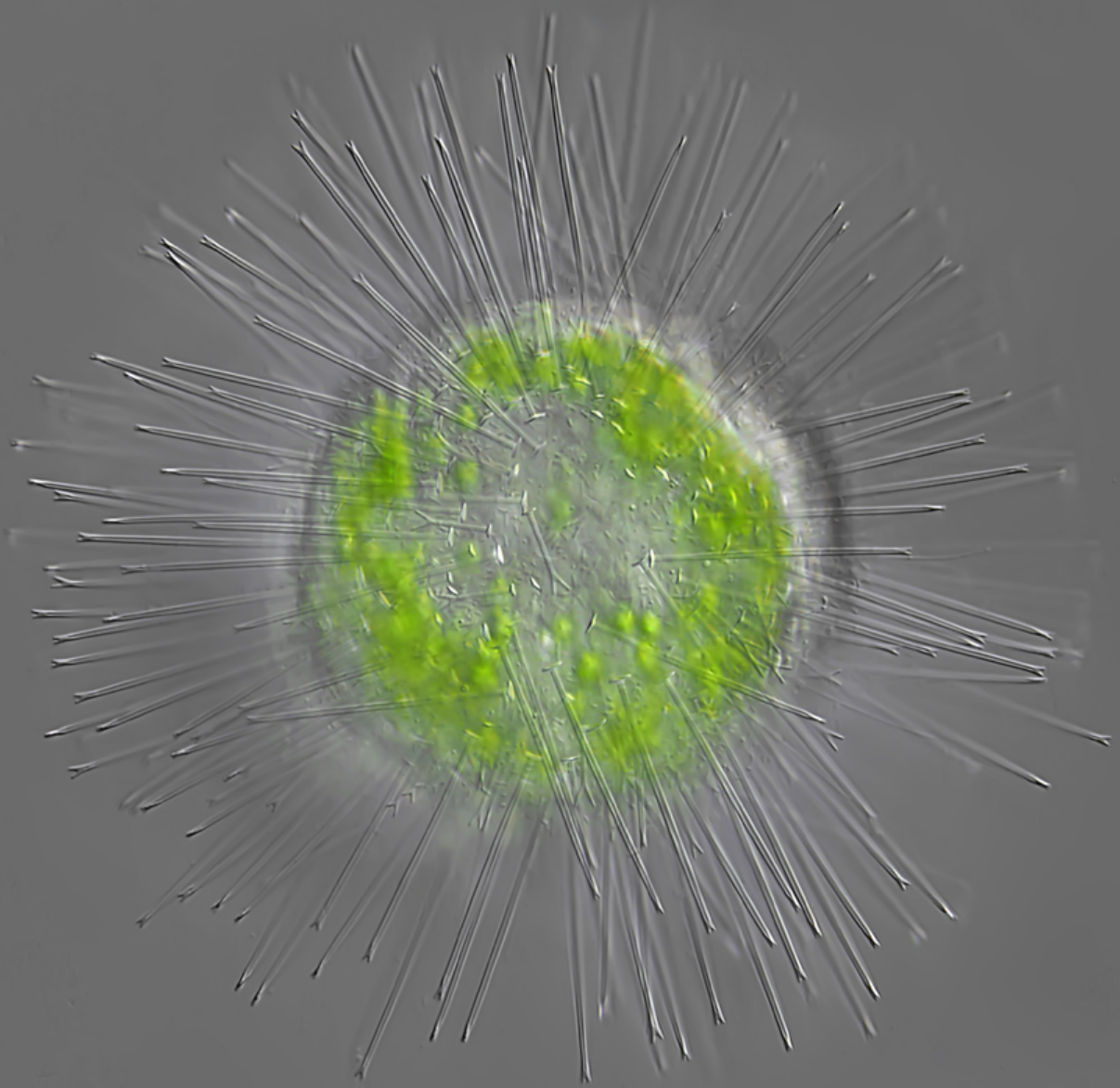
chloroplast and a diameter of 5–6  $\mu\text{m}$  (*Chlorella* type). In addition to these green specimens, however, colorless specimens without symbiotic algae are also found less frequently.

More images and information on *Acanthocystis turfacea*: [Ferry Siemensma-Microworld-Acanthocystis turfacea](#)



**Fig. 1:** *Acanthocystis turfacea*.  $D = 84\ \mu\text{m}$ . A slightly squashed specimen. Obj. 60 X.

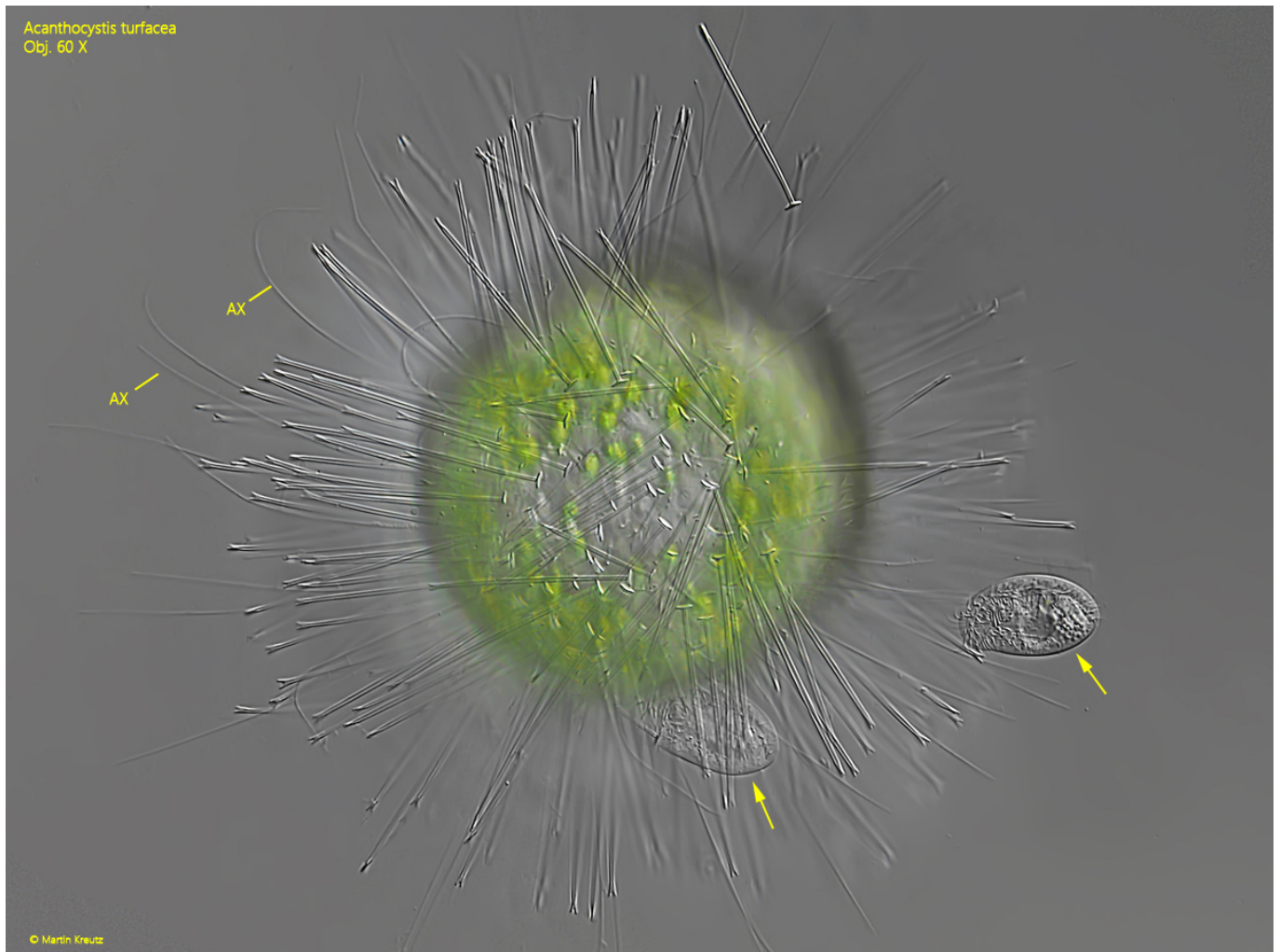
*Acanthocystis turfacea*  
Obj. 60 X



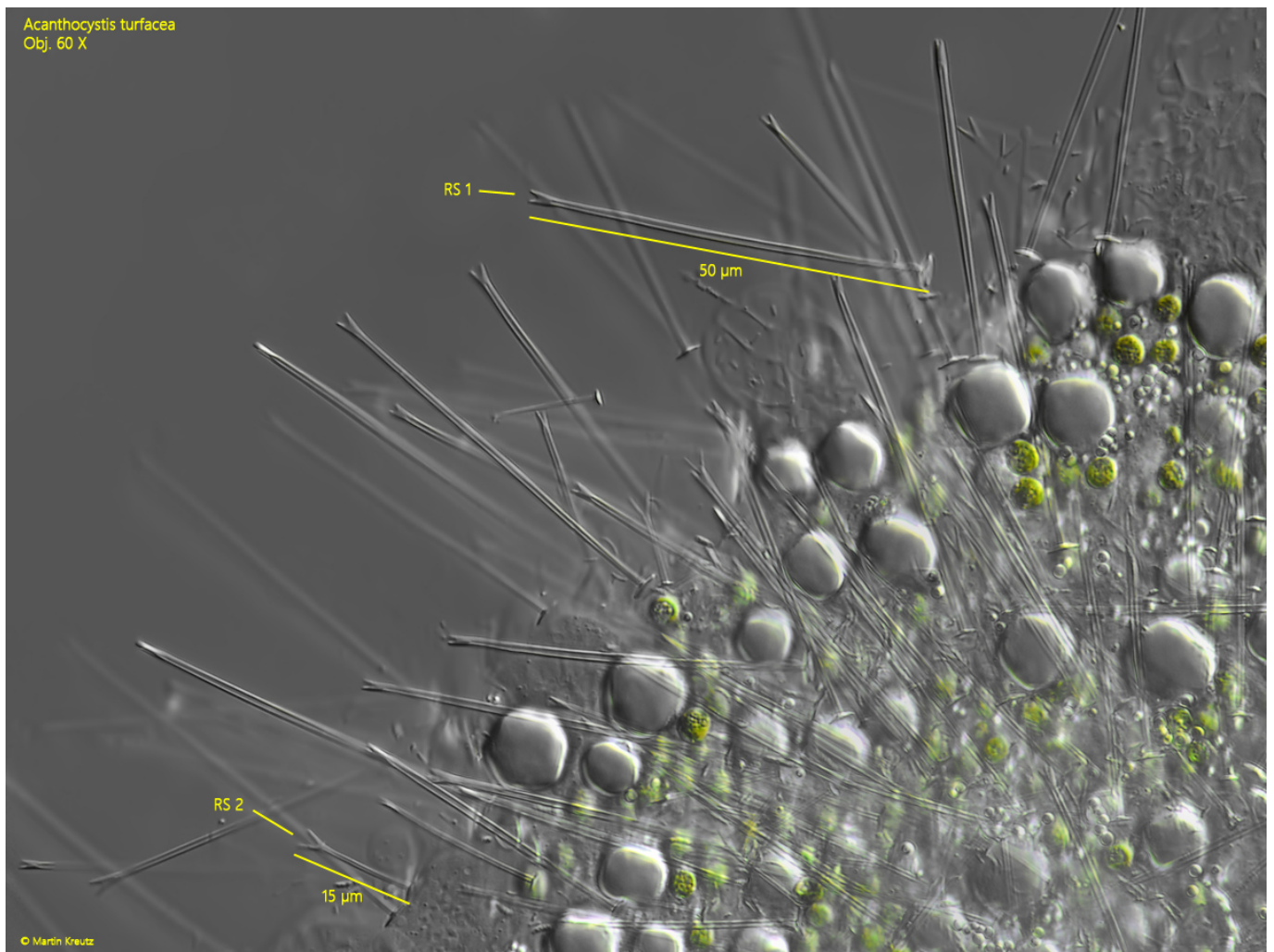
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**Fig. 2:** *Acanthocystis turfacea*.  $D = 72\ \mu\text{m}$ . A slightly squashed specimen with focal plane on the long radial spines type 1. Obj. 60 X.

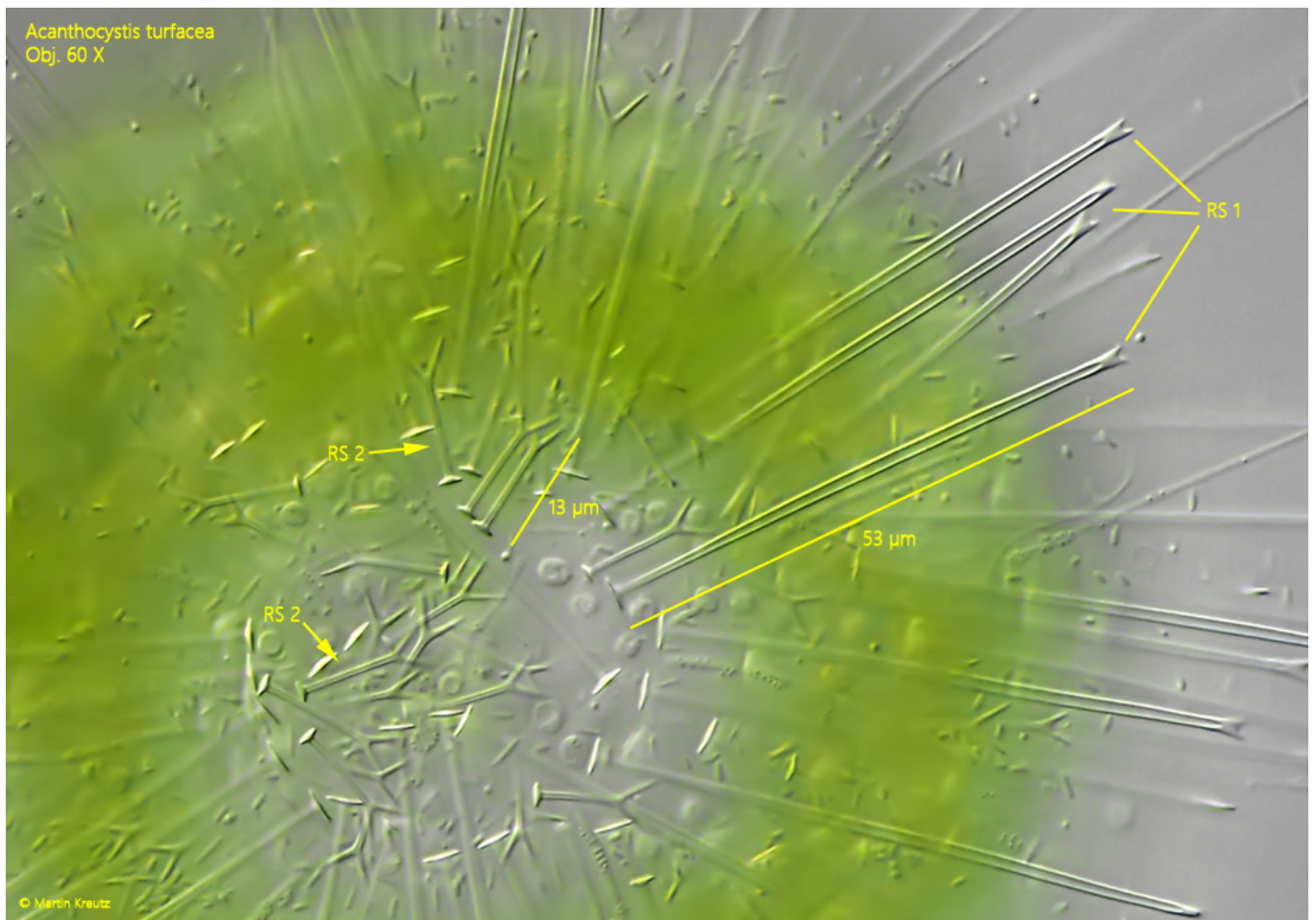




**Fig. 3:** *Acanthocystis turfacea*. D = 76  $\mu\text{m}$ . A slightly squashed specimen with extended axpopodia (AX). Note the both specimens of the ciliate *Chilodonella uncinata* (arrows) grazing on bacteria located between the radial spines type 1. Obj. 60 X.

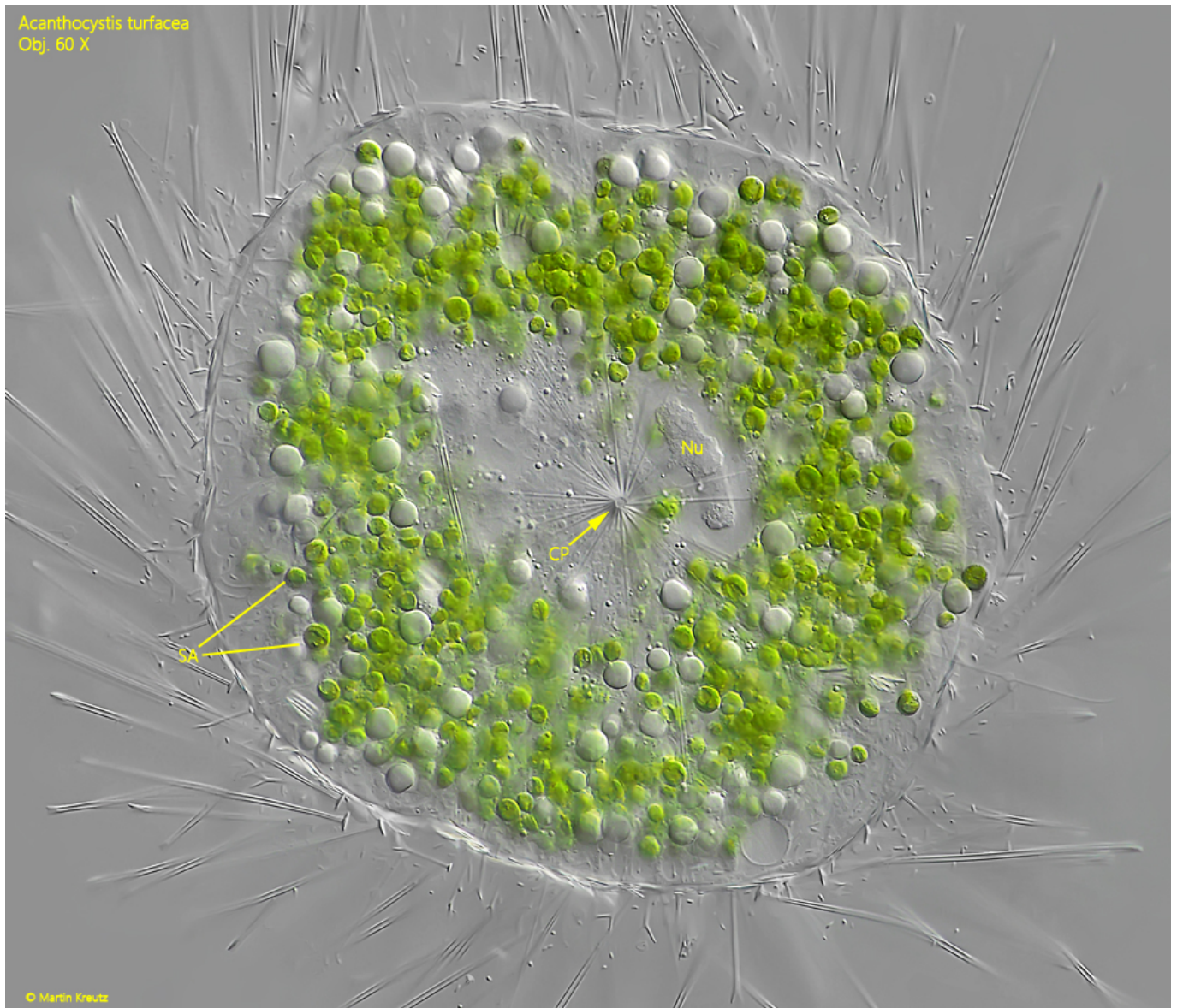


**Fig. 4:** *Acanthocystis turfacea*. The radial scales of type 1 (RS 1) and type 2 (RS 2) in a strongly squashed specimen. Obj. 60 X.



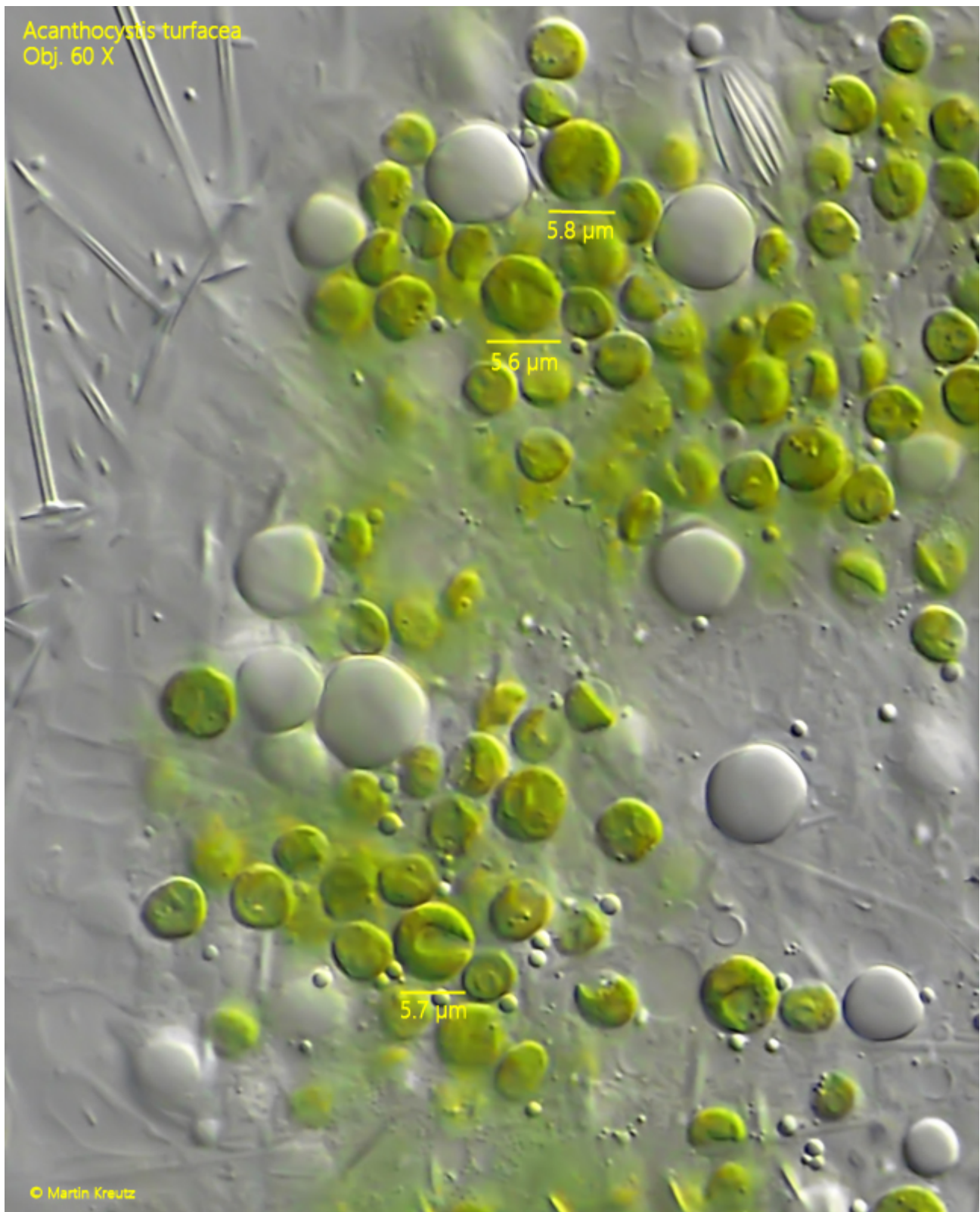
**Fig. 5:** *Acanthocystis turfacea*. The radial scales of type 1 (RS 1) and type 2 (RS 2) in a second, strongly squashed specimen. Obj. 60 X.





**Fig. 6:** *Acanthocystis turfacea*. The centroplast (CP) and the nucleus (Nu) in a squashed specimen. Obj. 60 X.





**Fig. 7:** *Acanthocystis turfacea*. The symbiotic algae are from the the *Chlorella* type with a diameter of 5.6– 5.8 µm. Obj. 60 X.

Acanthocystis turfacea  
Obj. 100 X

a

b

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**Fig. 8 a-b:** *Acanthocystis turfacea*. D = 54  $\mu\text{m}$ . Two focal planes of a specimen without symbiotic algae. Obj. 100 X.