Acanthocystis turfacea Carter, 1863

Most likely ID: n.a.

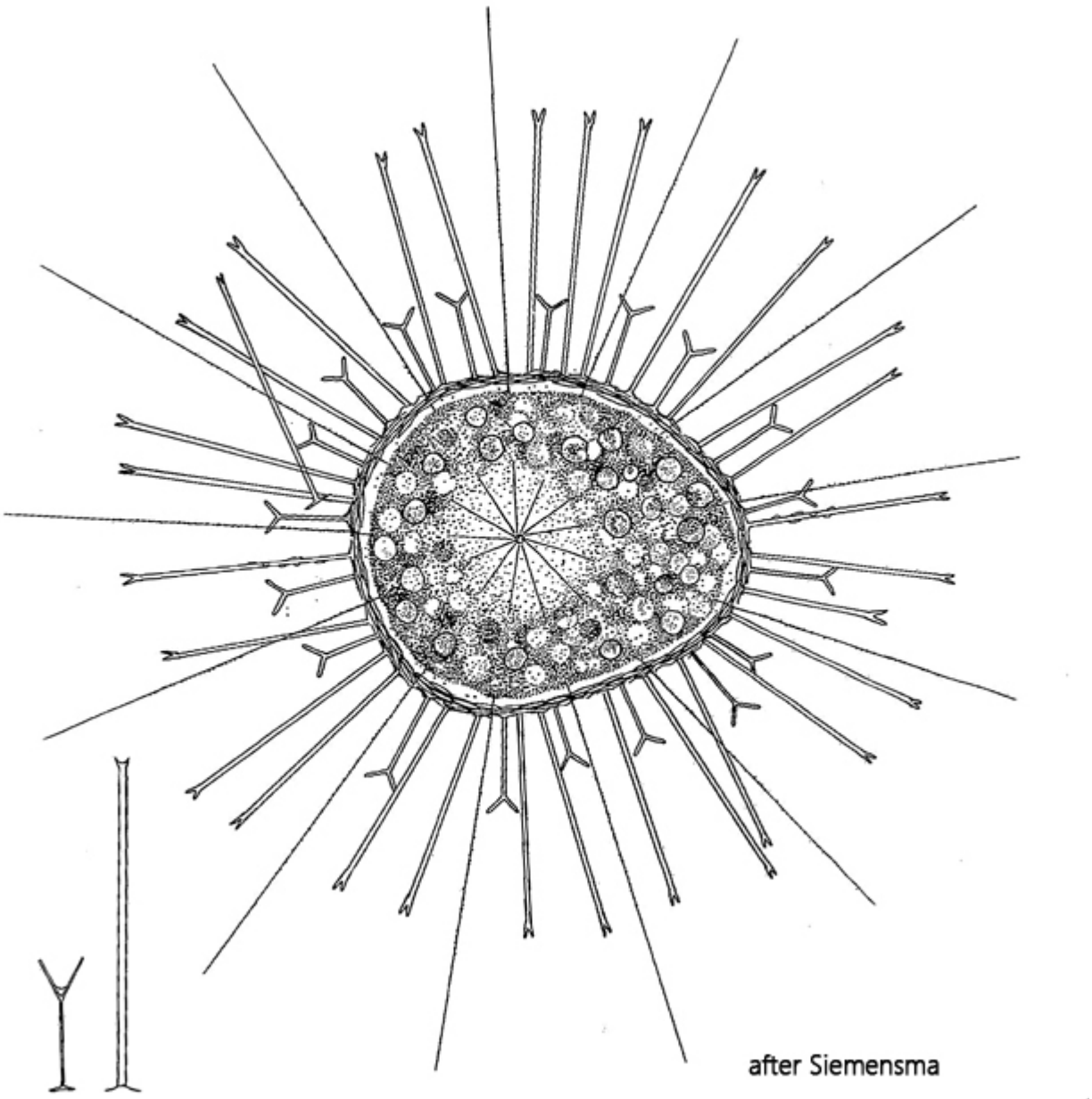
Synonym: n.a.

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 eccentrical, 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 µm (*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*

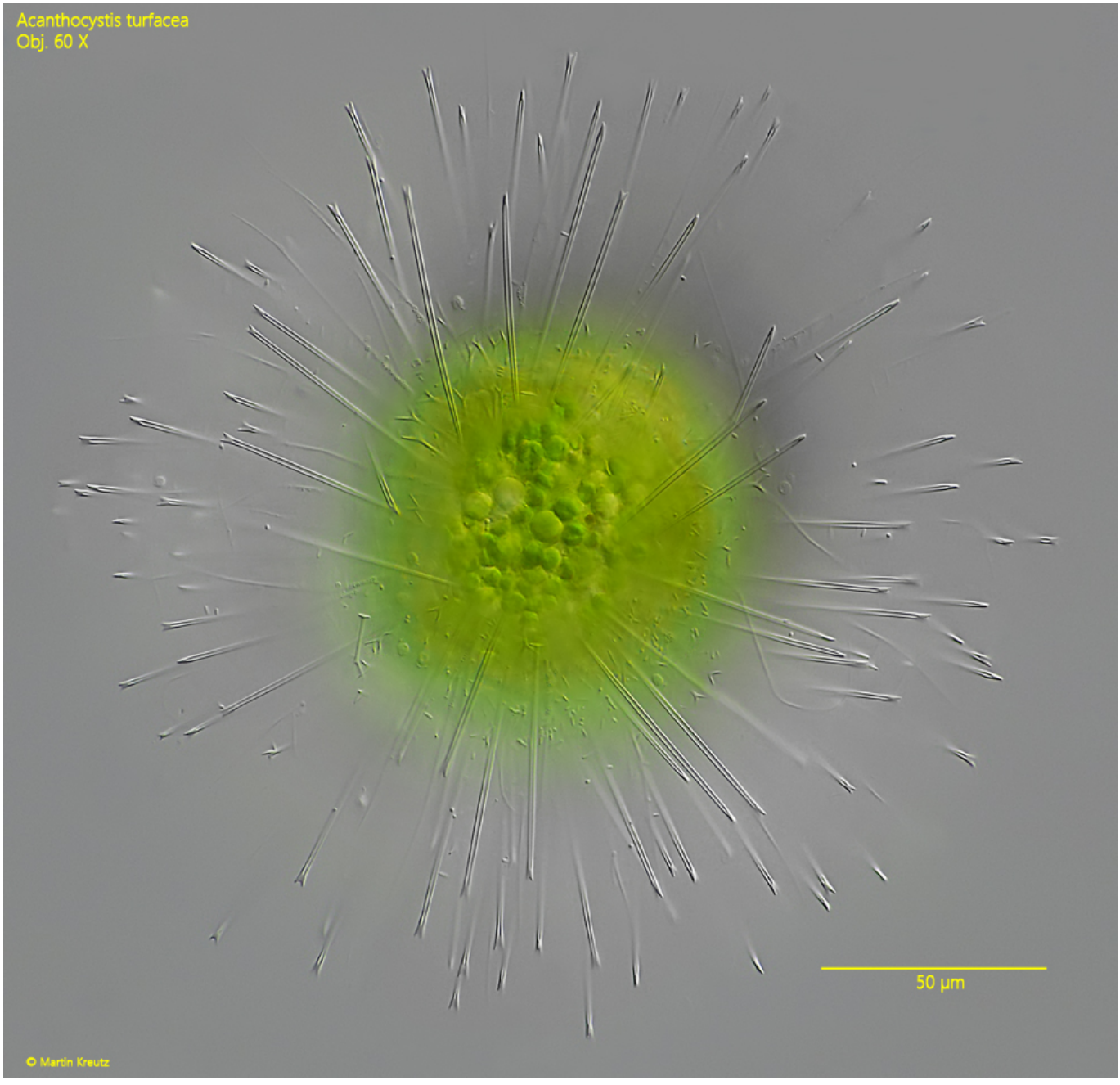


Fig. 1: *Acanthocystis turfacea*. D = 84 µm. A slightly squashed specimen. Obj. 60 X.

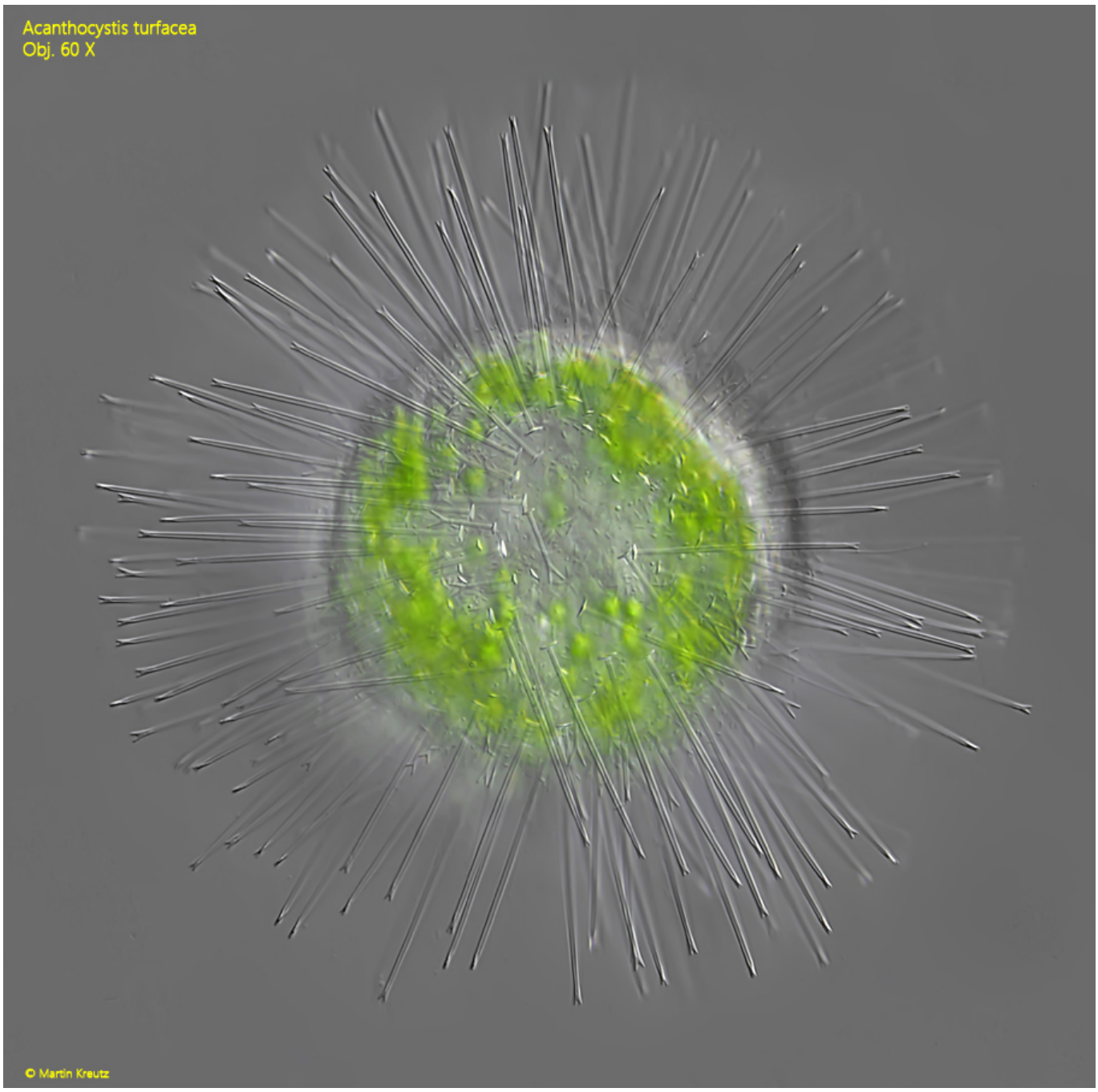


Fig. 2: *Acanthocystis turfacea*. D = 72 µm. A slightly squashed specimen with focal plane on the long radial spines type 1. Obj. 60 X.

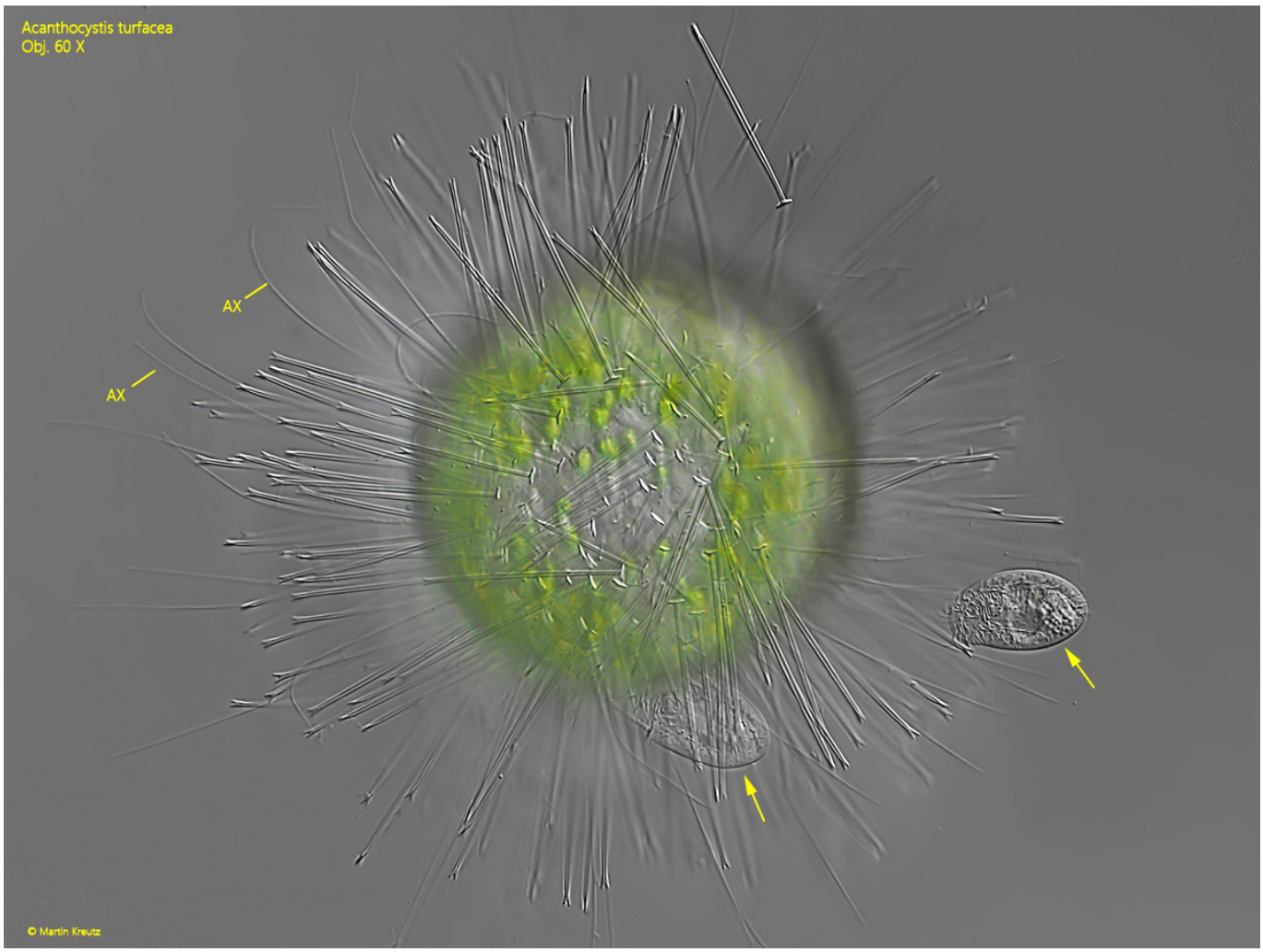


Fig. 3: *Acanthocystis turfacea*. D = 76 µm. A slightly squashed specimen with extended axopodia (AX). Note the both specimens of the ciliate *Chilodonella uncinata* (arrows) grazing on bacteria located between the radial spines type 1. Obj. 60 X.

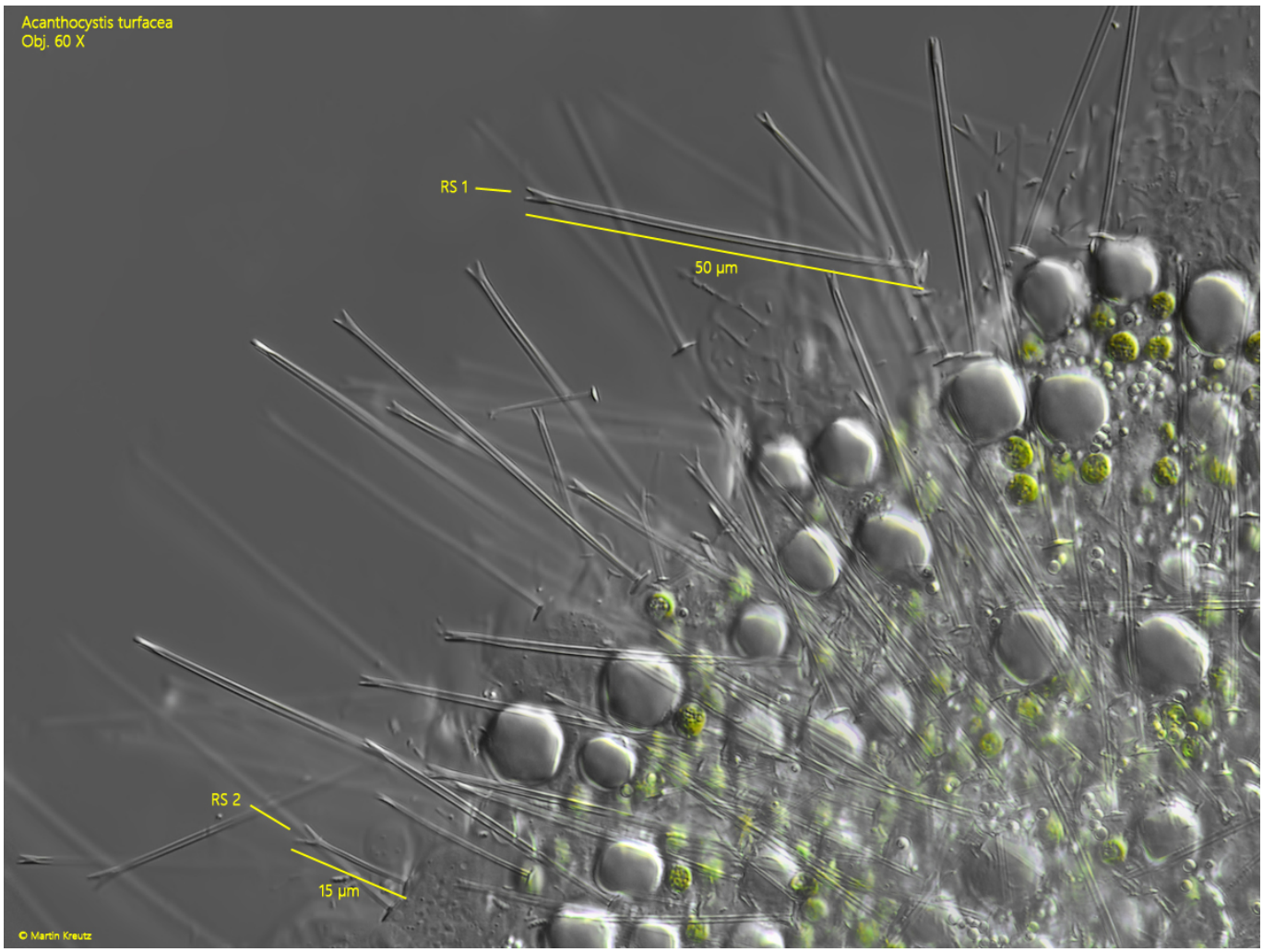


Fig. 4: *Acanthocystis turfacea*. The radial scales of type 1 (RS 1) and type 2 (RS 2) in a strongly squashed specimen. Obj. 60 X.

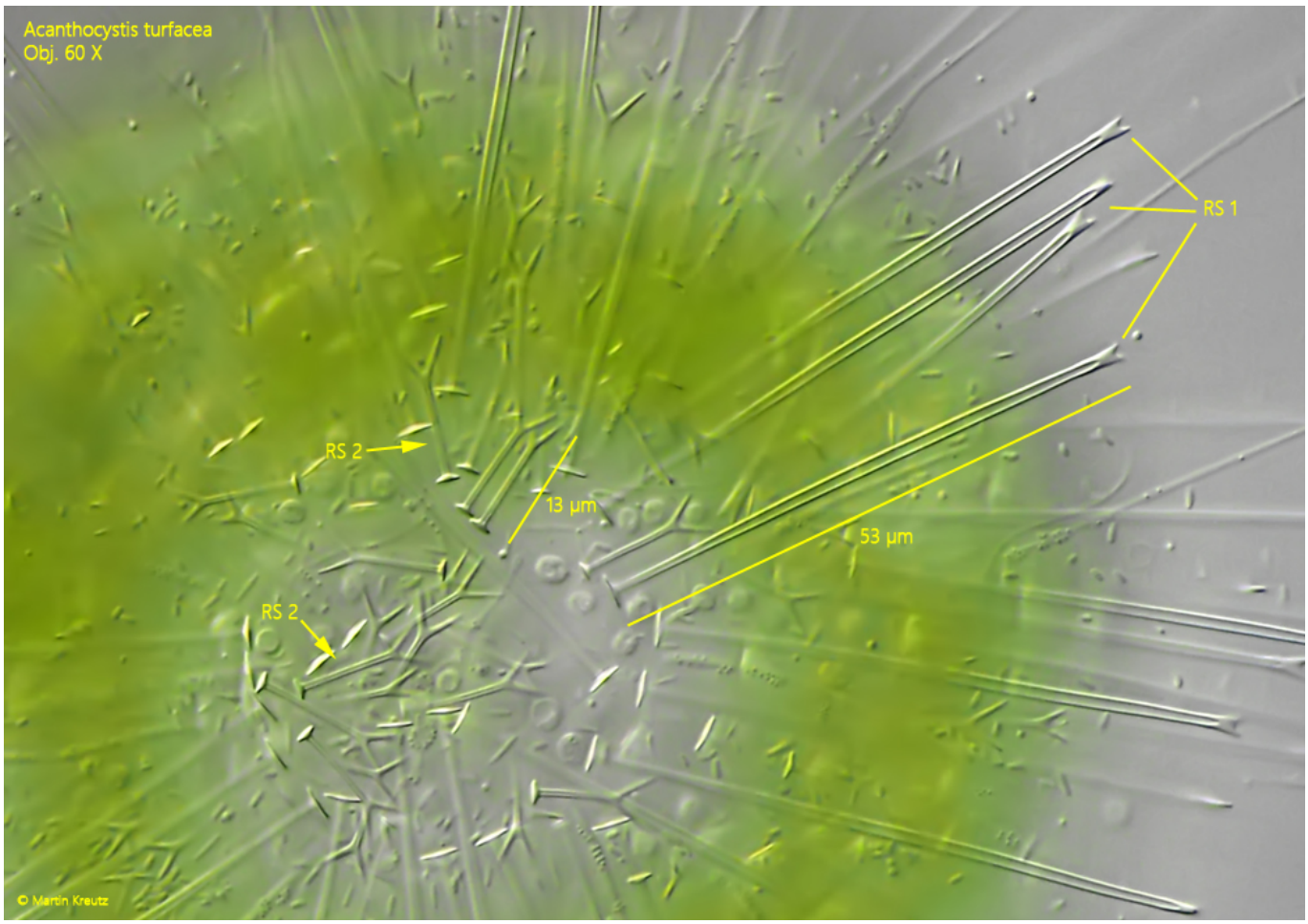


Fig. 5: *Acanthocystis turfacea*. The radial scales of type 1 (RS 1) and type 2 (RS 2) in a second, strongly squashed specimen. Obj. 60 X.

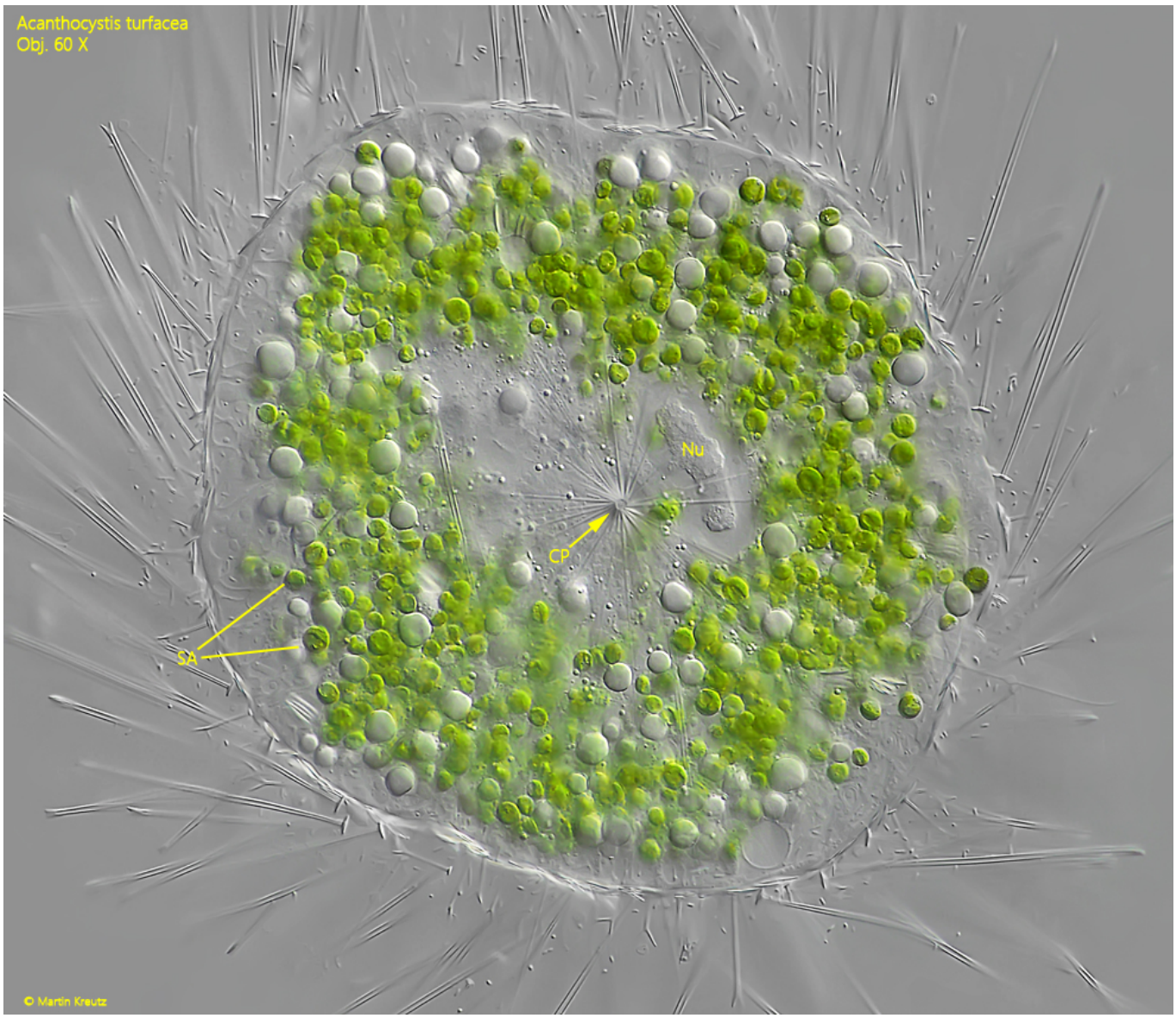


Fig. 6: *Acanthocystis turfacea*. The centroplast (CP) and the nucleus (Nu) in a squashed specimen. Obj. 60 X.

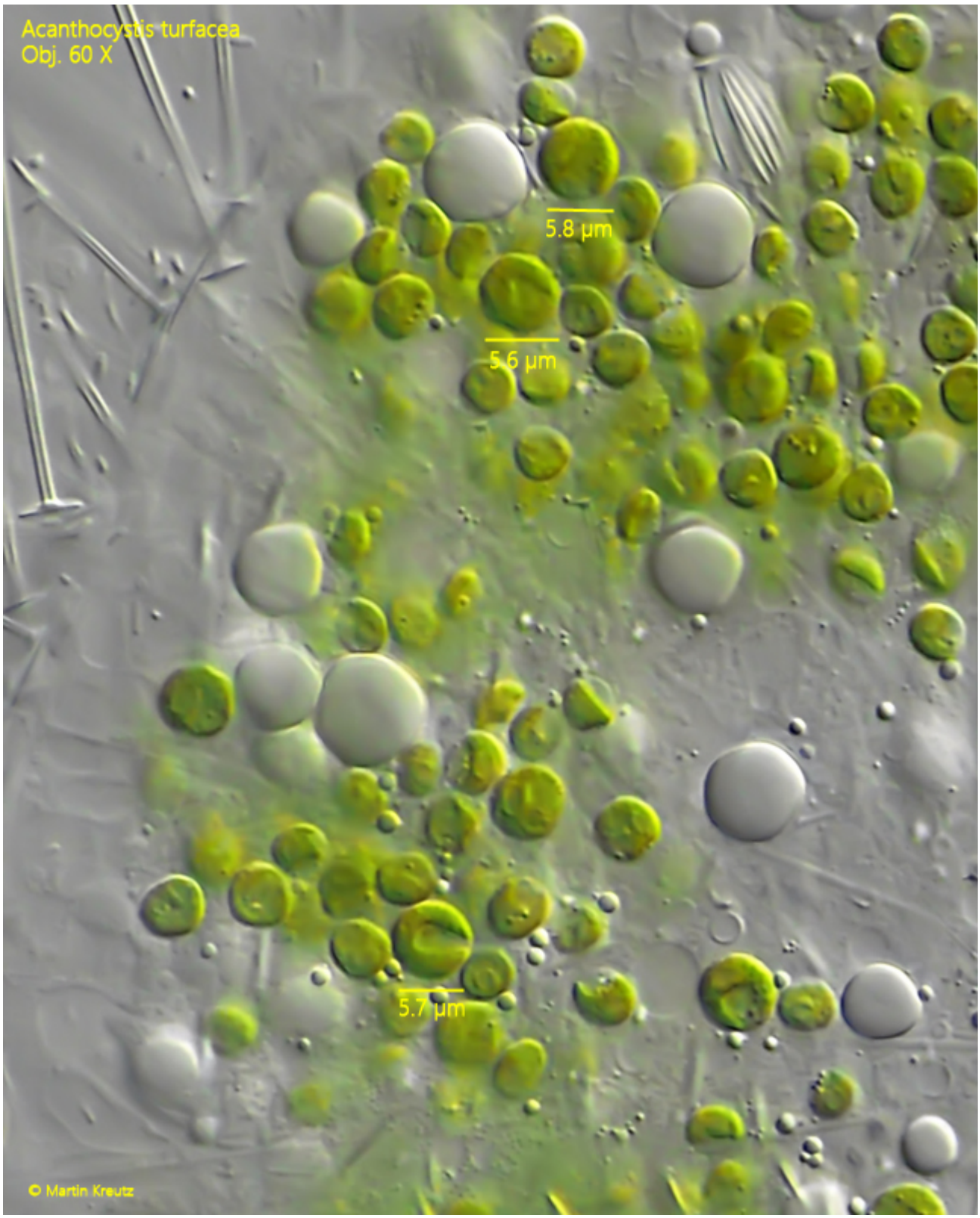


Fig. 7: *Acanthocystis turfacea*. The symbiotic algae are from the the *Chlorella* type with a diameter of 5.6– 5.8 µm. Obj. 60 X.

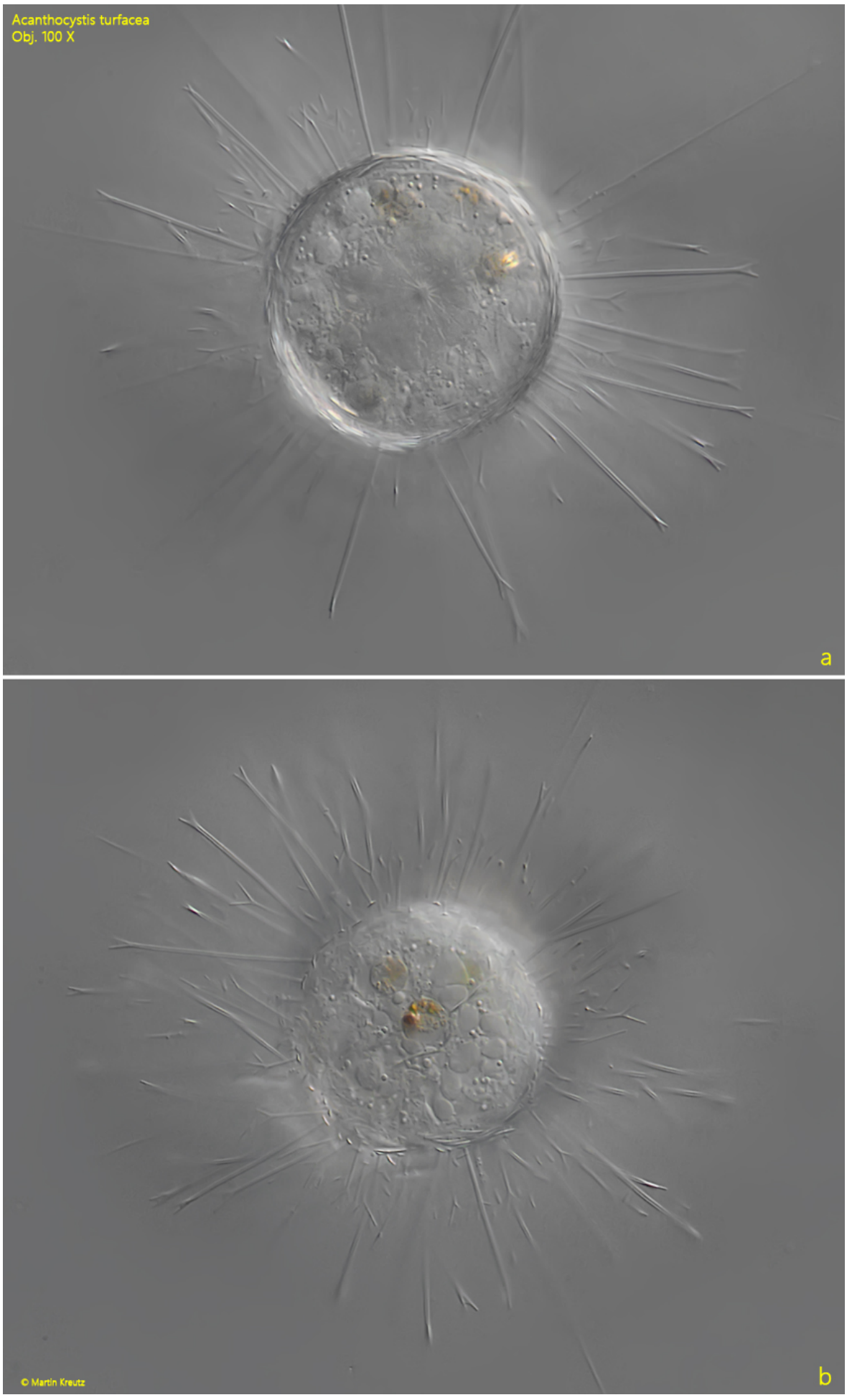

Acanthocystis turfacea
Obj. 100 X
a
b
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Fig. 8 a-b: *Acanthocystis turfacea*. D = 54 µm. Two focal planes of a specimen without symbiotic algae. Obj. 100 X.