Nusuttodinium aeruginosum

(Stein) Takano & Horiguchi, 2014

Most likely ID: n.a.

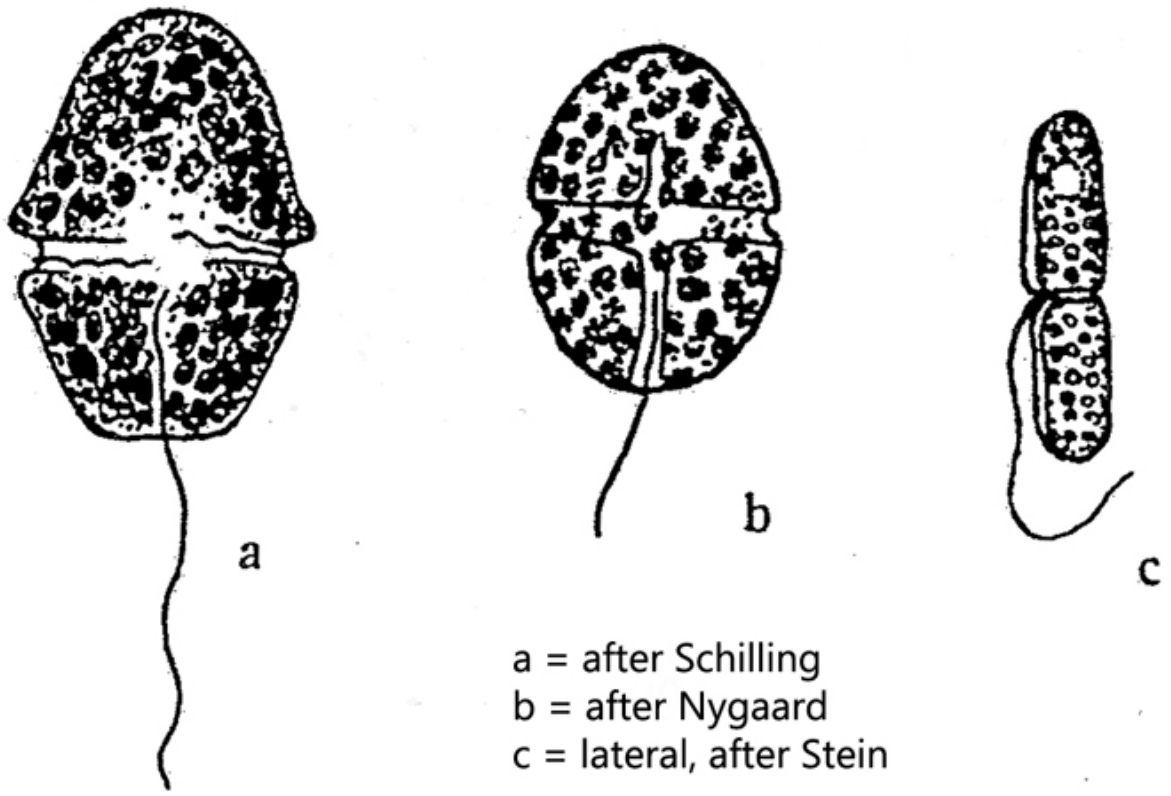
Synonym: *Gymnodinium aeruginosum*

Sampling location: Simmelried, Ulmisried

Phylogenetic tree: *Nusuttodinium aeruginosum*

Diagnosis:

- length 13–44 µm
- body ovoid, tear-shaped or squarish
- epicone (anterior half) longer than hypocone (posterior half)
- eyespot sometimes present
- chloroplasts (= kleptoplasts) numerous, blue-green



Nusuttodinium aeruginosum

I found *Nusuttodinium aeruginosum* (previously *Gymnodinium aeruginosum*) up to now in the Ulmisried and in the Simmelried. The species can be identified easily by the blue-green color. In fact, *Nusuttodinium aeroginosum* is a colorless species. The chloroplasts, which give the cell its blue-green coloration, were “stolen” from photosynthetic prey organisms. Such stolen chloroplasts are also called cleptoplasts. It could be proved that *Nussuttodinium aeroginosum* obtains these kleptoplasts from *Chroomonas*. The cells of the prey organisms are completely digested except for the chloroplasts. These are then incorporated into the peripheral cell layer and kept alive.

In the literature, the species is described without an eyespot. However, I could detect an eyespot in some specimens but not in all (s. figs. 2 a-e and 4 a-c). Furthermore I found specimens with a rounded epicone and hypocone (s. fig. 3 a-c) and a length of up to 42 µm. Thus, the species seems to be quite variable.

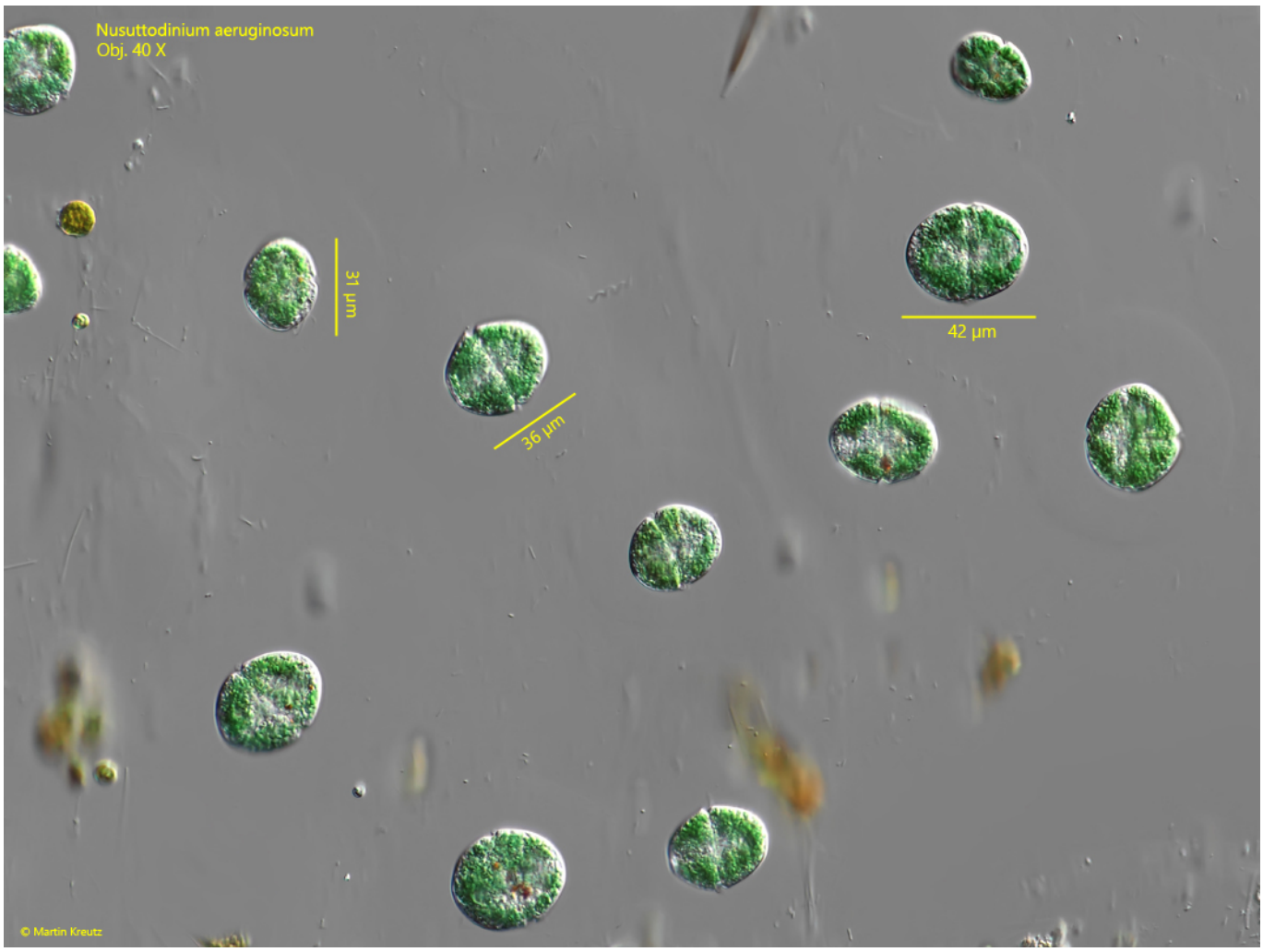


Fig. 1: *Nusuttodinium aeruginosum.* L = 31-42 µm. Overview of a mass occurrence. Obj. 40 X.

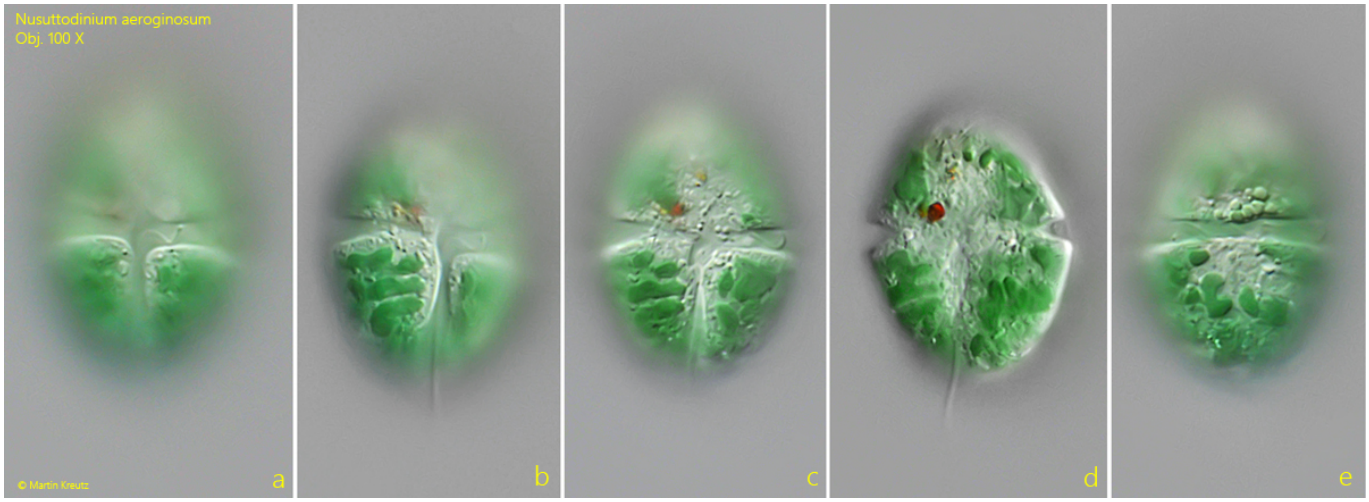


Fig. 2 a-e: *Nusuttodinium aeruginosum.* L = 36 µm. A freely swimming specimen from ventral (a-d) and from dorsal (e). Obj. 100 X.

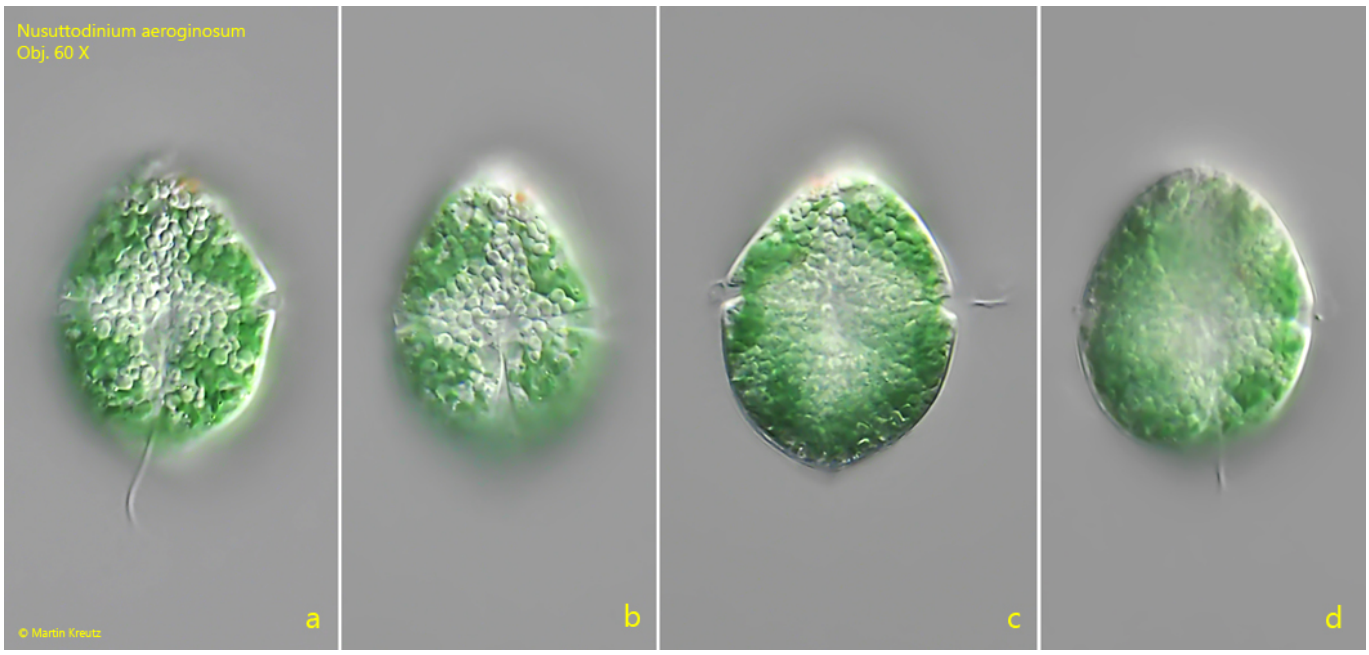


Fig. 3 a-d: *Nusuttodinium aeruginosum.* L = 37 µm. Different focal planes of a second freely swimming specimen from ventral. Obj. 60 X.

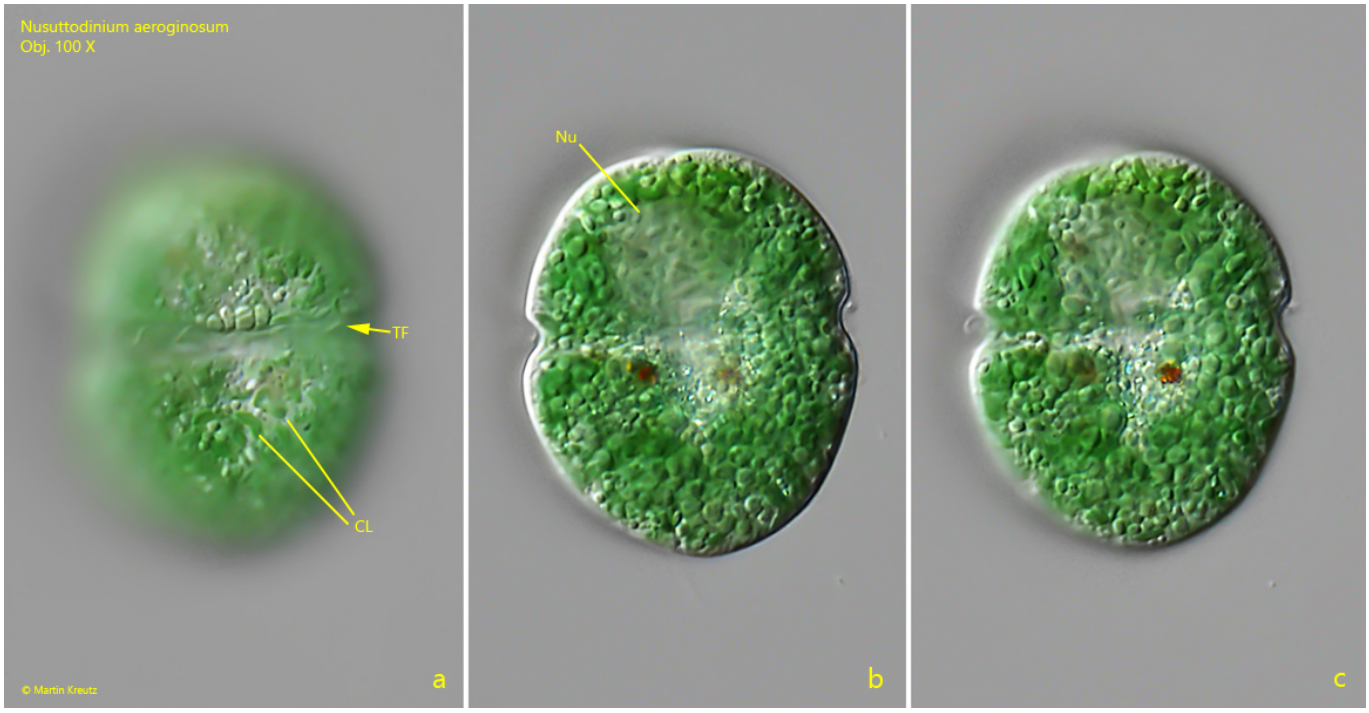


Fig. 3 a-c: *Nusuttodinium aeruginosum.* L = 38 µm. A slightly squashed specimen from dorsal. CL = cleptoplasts, NU = nucleus, TF = transversal flagellum. Obj. 100 X.

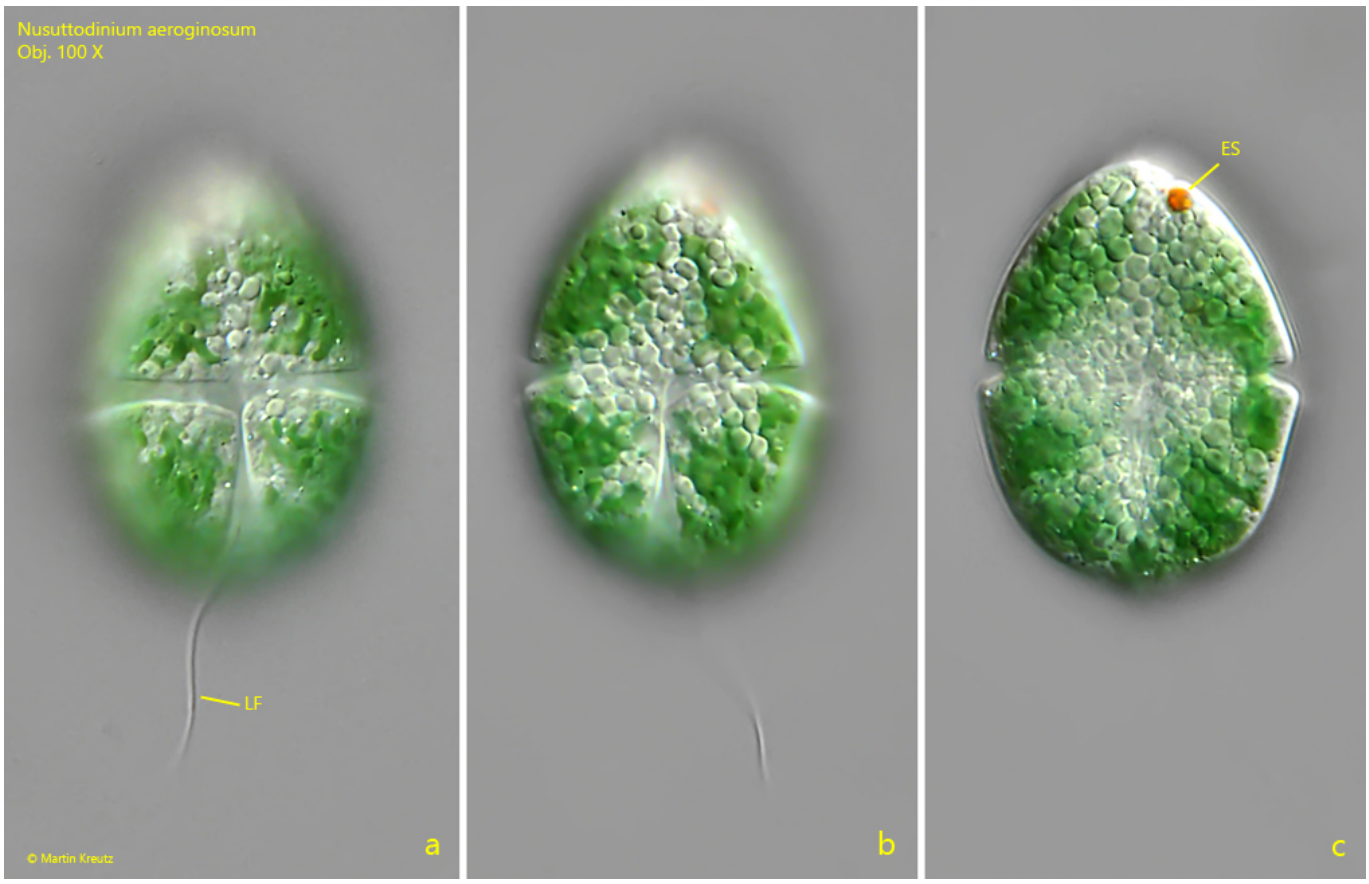


Fig. 4 a-c: *Nusuttodinium aeruginosum.* L = 36 µm. A slightly squashed specimen from ventral. ES = eyespot, LF = longitudinal flagellum. Obj. 100 X.