Coleps viridis Ehrenberg, 1831

Most likely ID: n.a.

Synonym: *Coleps hirtus viridis*

Sampling location: Pond of the camping site Dingelsdorf

Phylogenetic tree: *Coleps viridis*

Diagnosis:

- body barrel-shaped
- length 44–63 µm, width 21–35 µm
- cells green due to symbiotic algae
- apical mouth opening with basket
- uniform ciliation
- 12–16 longitudinal rows of plates
- anterior and posterior main plate with 4 “windows” each
- shape of the “windows” in the armour pretzel-shaped
- contractile vacuole terminal
- macronucleus spherical
- one caudal cilium
- 1-4 short spines at posterior end

No drawings from previous authors available.

The species *Coleps viridis* was established by Ehrenberg in 1831, but later considered as a form of *Coleps hirtus* by Kahl and named *Coleps hirtus viridis*. It was not until 2021 that Pröschold et al. subjected *Coleps hirtus viridis* to morphological and genetic analyses, including symbiotic algae. As a result of the study, Pröschold et al. re-established the original name *Coleps virdis* and were able to identify the symbiotic algae as *Micractinium conductrix*.

In my population all specimens of *Coleps viridis* were smaller than 50 µm. Because

of the small size the species is probably often overlooked or confused with *Coleps hirtus* or *Coleps hirtus var. minor*. At low magnifications the cells appear opaque black. Only at higher magnifications does the green coloration become visible due to the symbiotic algae (s. figs. 1 a-d and 2 a-c). I could count 15–30 symbiotic algae in each cell. The algae cells have a cup-shaped chloroplast with a pyrenoid, are spherical and have a diameter of about 5.0 -5.4 µm (s. fig. 3). Thus, they correspond to the description of *Micractinium conductrix* by Pröschold et al. *Coleps virdis* has one caudal cilium (s. figs. 1 c and 2 a-b) and the armour is of the *Coleps hirtus* type. That means each main plate has 4 “windows” which are pretzel-shaped (s. fig. 4).

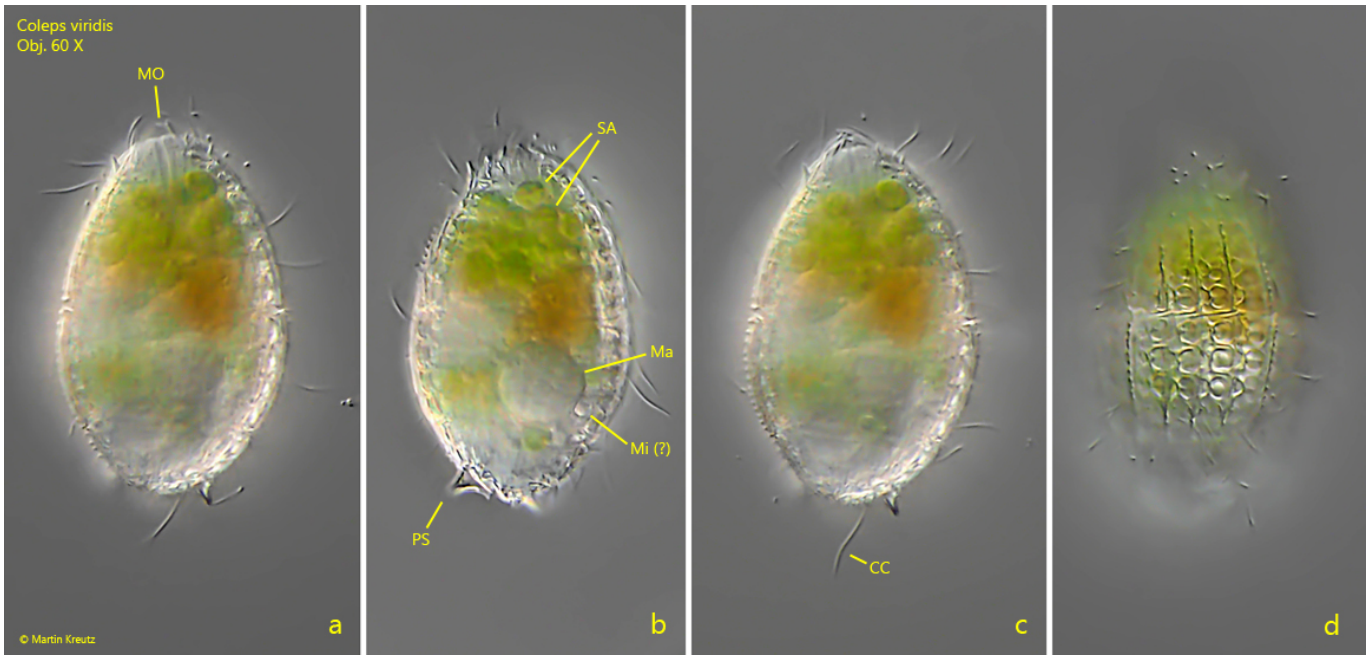

Fig. 1 a-d: *Coleps viridis*. L = 47 µm. A freely swimming specimen. CC = caudal cilium, Ma = macronucleus, Mi = probably the micronucleus, MO = mouth opening, PS = posterior spine, SA = symbiotic algae. Obj. 60 X.

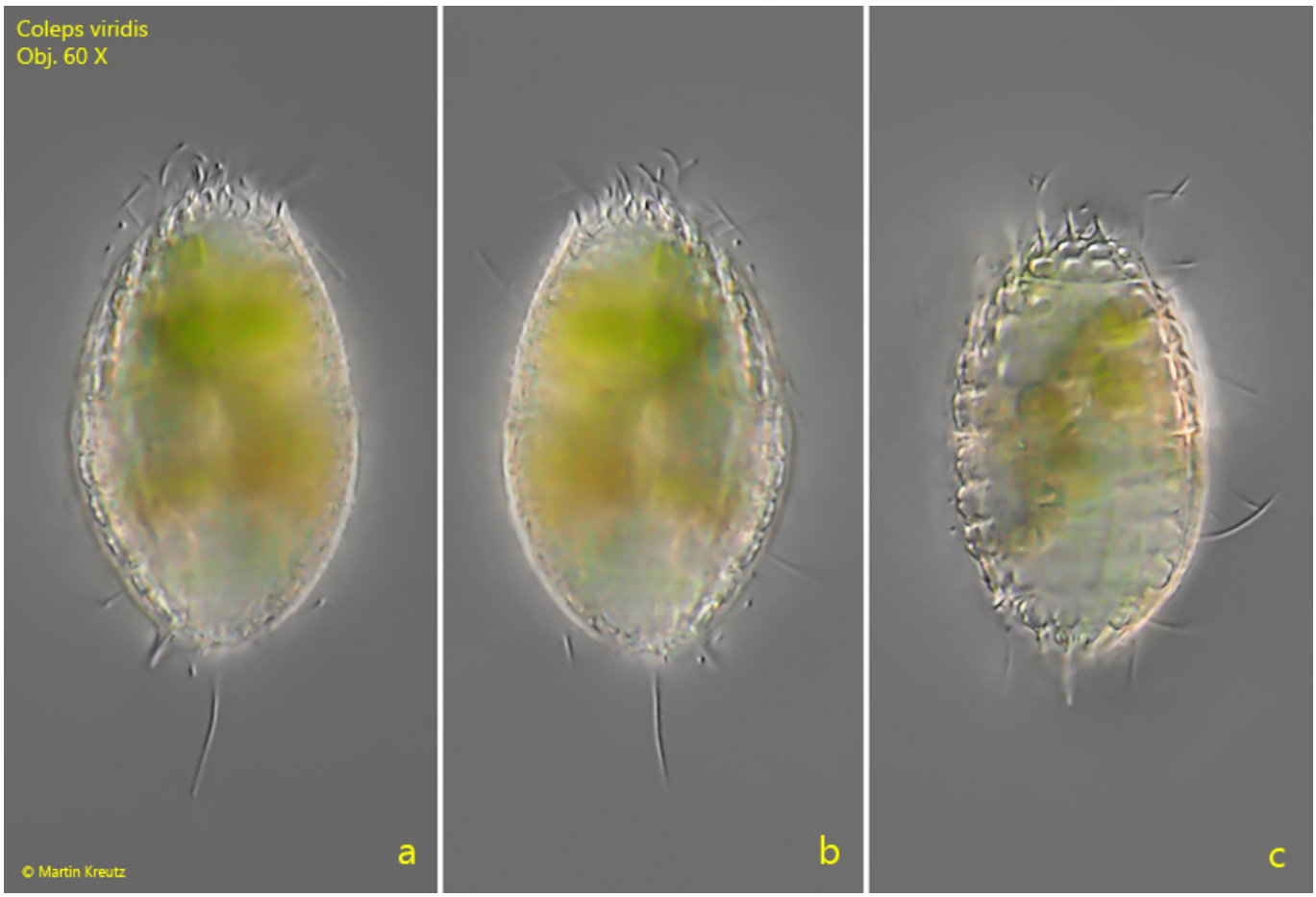

Fig. 2 a-c: *Coleps viridis*. L = 44 µm. A second, freely swimming specimen. Obj. 60 X.

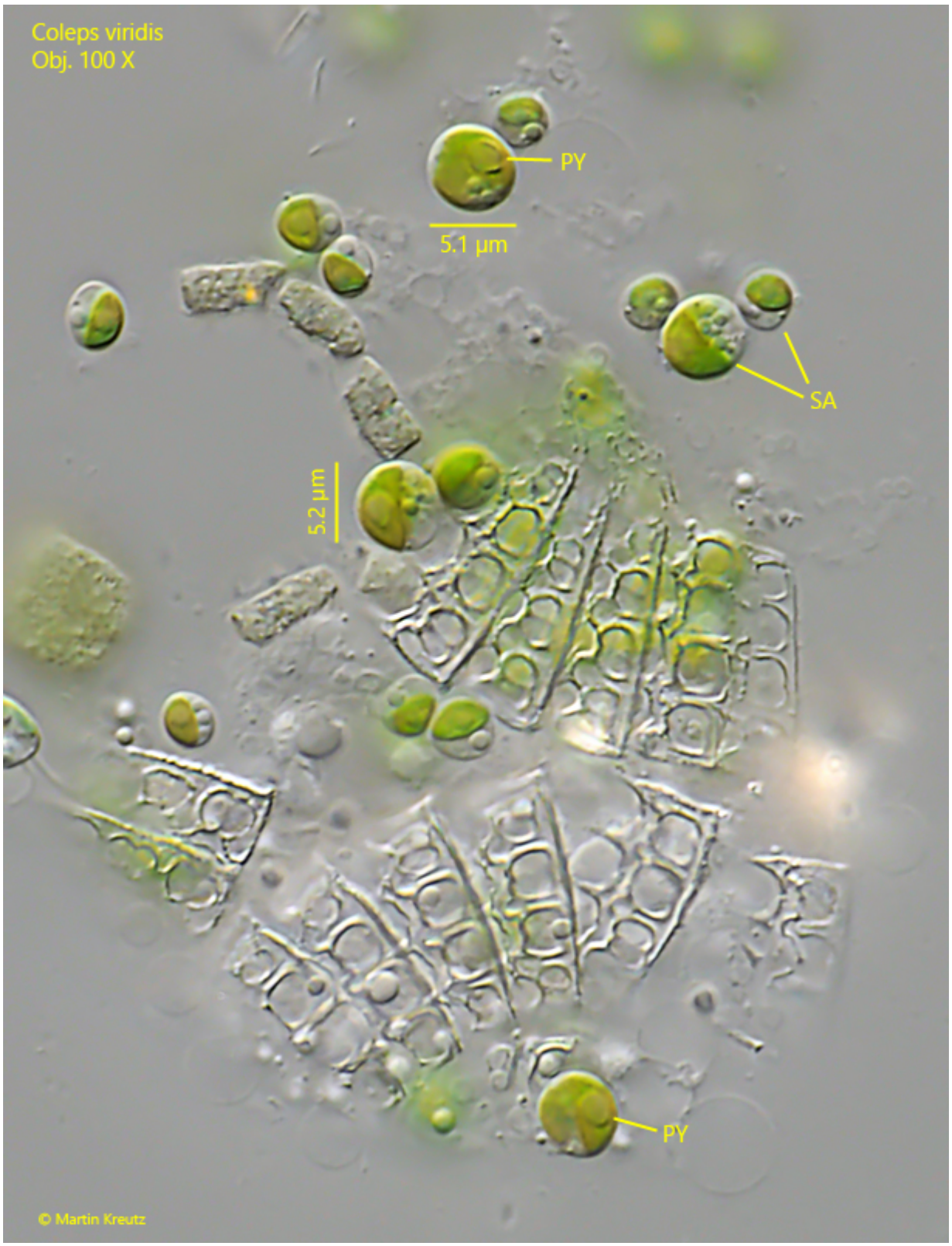

Fig. 3: *Coleps viridis*. A squashed specimen with the released symbiotic algae. The algae are spherical with a diameter of 5.0–5.4 µm, have a cup shaped chloroplast and one pyrenoid (PY). Obj. 100 X.

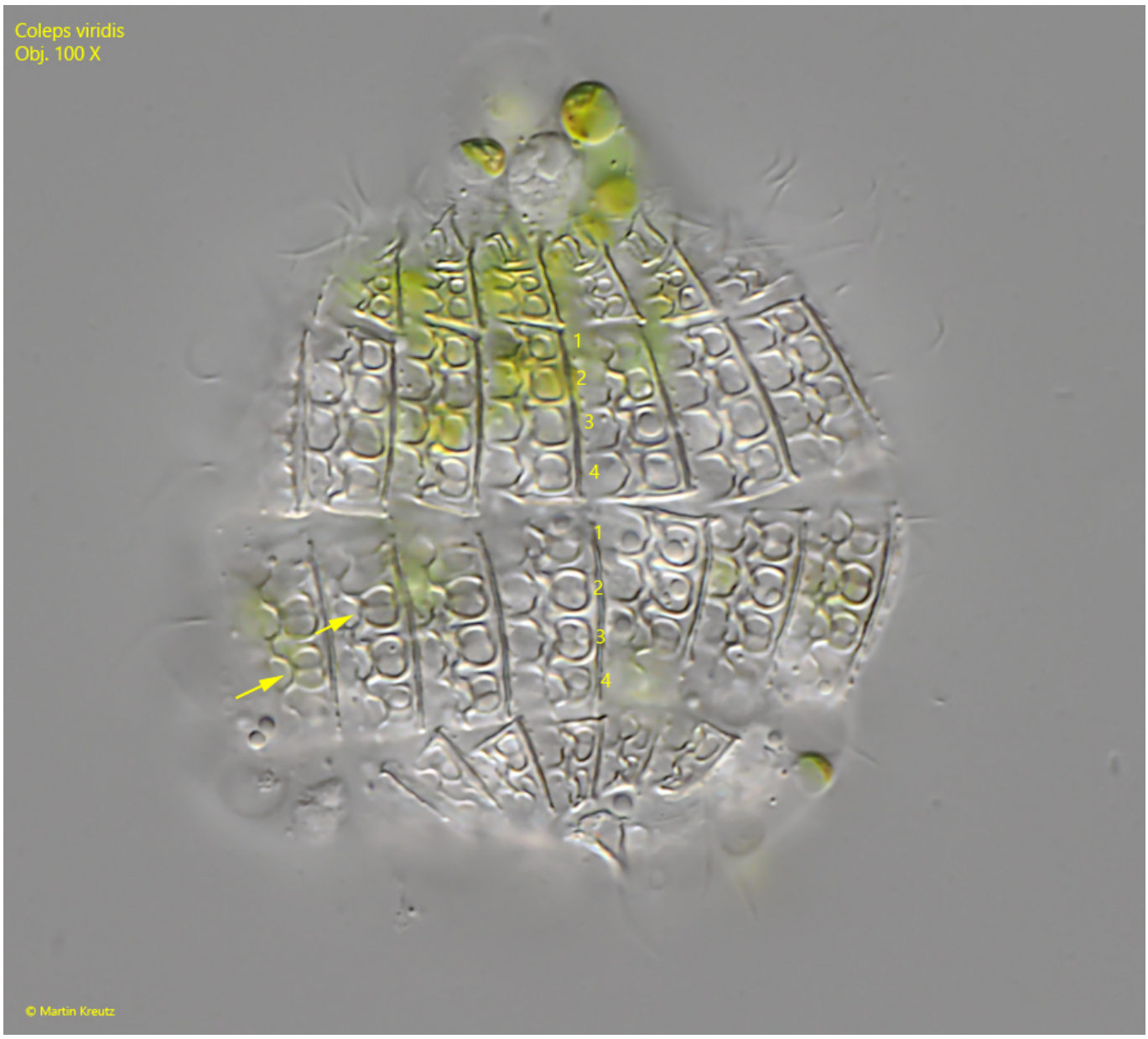

Fig. 4: *Coleps viridis*. In the anterior main plate as well as in the posterior main plate there are 4 “windows” (1–4) each. The “windows” are pretzel-shaped (arrows). Obj. 100 X.