Closterium ralfsii

Brébisson ex Ralfs, 1848

Most likely ID: n.a.

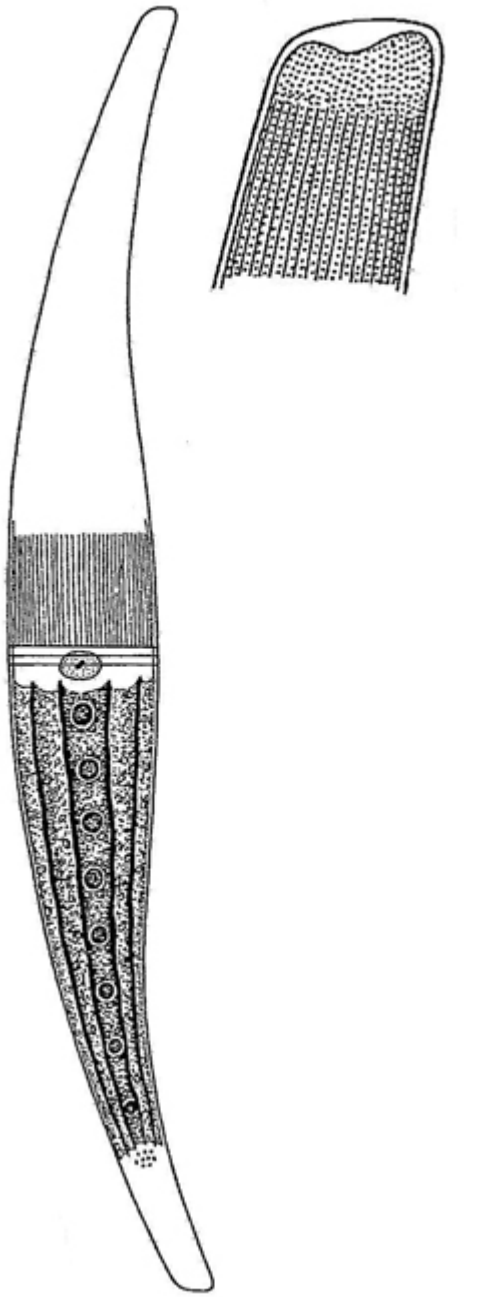
Synonym: n.a.

Sampling location: Pillersee Moor (Austria)

Phylogenetic tree: *Closterium ralfsii*

Diagnosis:

- cells slender, outer margin evenly curved, inner margin slightly swollen in mid-section
- length 300–550 µm, width 27–50 µm
- end of cells more strongly tapered and curved to inner margin
- cell yellowish or brown, rarely colorless
- chloroplast with 2–3 ridges
- up to20 pyrenoids per semi-cell
- girdle bands absent
- apices with distinct porus, slightly truncate and rounded
- cell wall of apices punctate
- terminal vacuoles with up to 10 crystals



Closterium ralfsii

I found *Closterium ralfsii* in June 2024 in the Pillersee Moor (Austria), where the species occurred in large numbers. The cells have a distinctive shape, due to the swollen middle part of the inner margin and the tapered ends, which are slightly more curved. In addition, the porus in the apices is already visible at medium magnification (s. figs. 1 a and 2 a-b).

The cell wall should be finely punctured between the striation (Huber-Pestalozzi, 1982). According to my observations, however, the striaton themselves consist of dots arranged in double rows (s. fig. 3). If the focus is raised only minimally, the

rows of dots become blurred and appear as continuous stripes. This effect could have led to the interpretation that rows of dots run between the stripes.

The similar form *Closterium ralfsii* var. *hybridum* is slimmer and longer (up to 770 µm) and has a very dense striation (9-13 stripes/10 µm). It is difficult to distinguish the subspecies *hybridum* from the parent form (Lenzenweger, 1996) and it is therefore questionable whether such a distinction is meaningful.

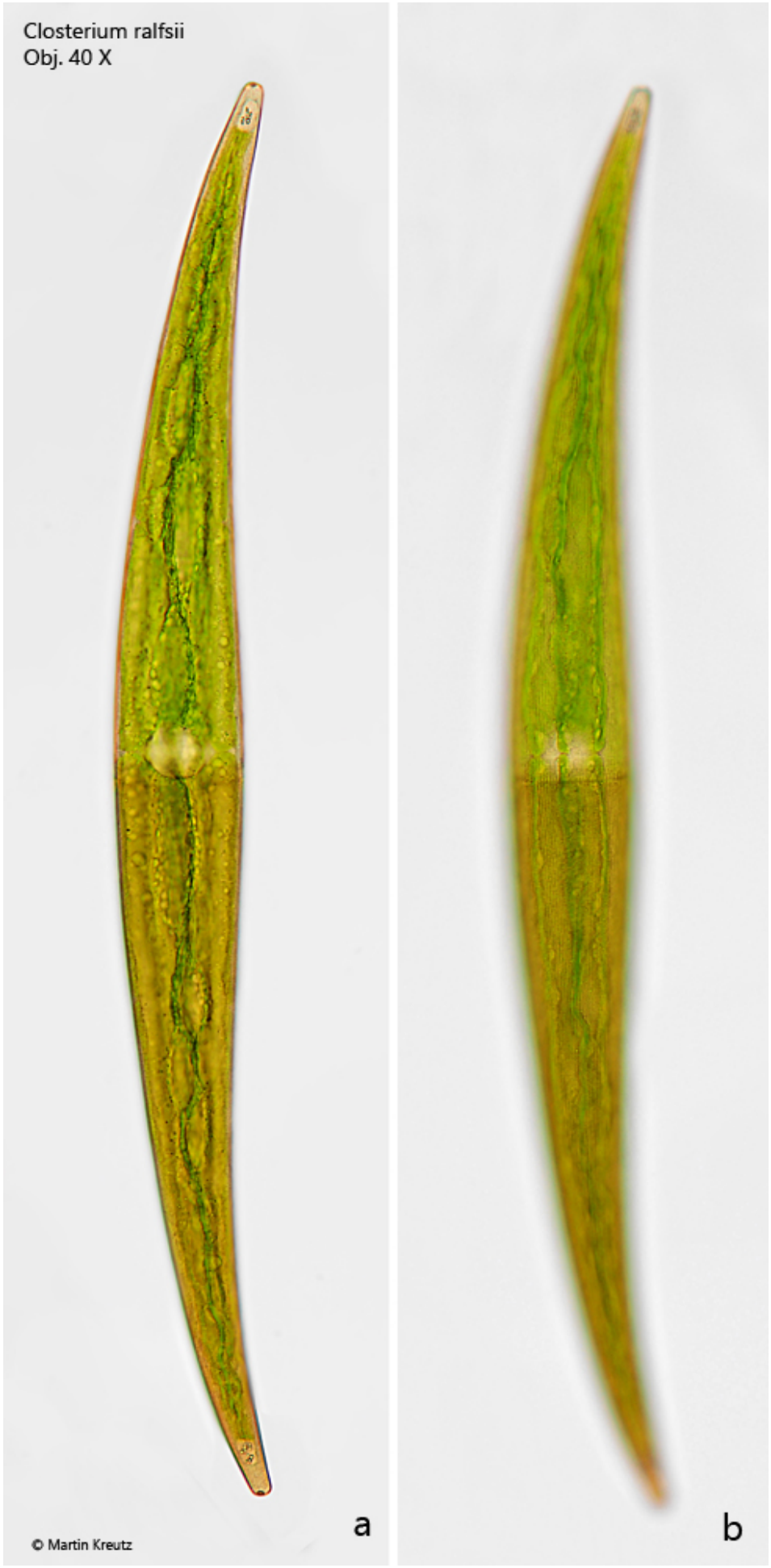

Closterium ralfsii
Obj. 40 X
a
b
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Fig. 1 a-b: *Closterium ralfsii*. L = 470 µm. Two focal planes of a brownish colored specimen in brightfield illumination. Obj. 40 X.

Fig. 2 a-b: *Closterium ralfsii*. The apex in DIC (a) and brightfield illumination (b). Note the distinct, apical porus (PO). TV = terminal vacuole. Obj. 100 X.

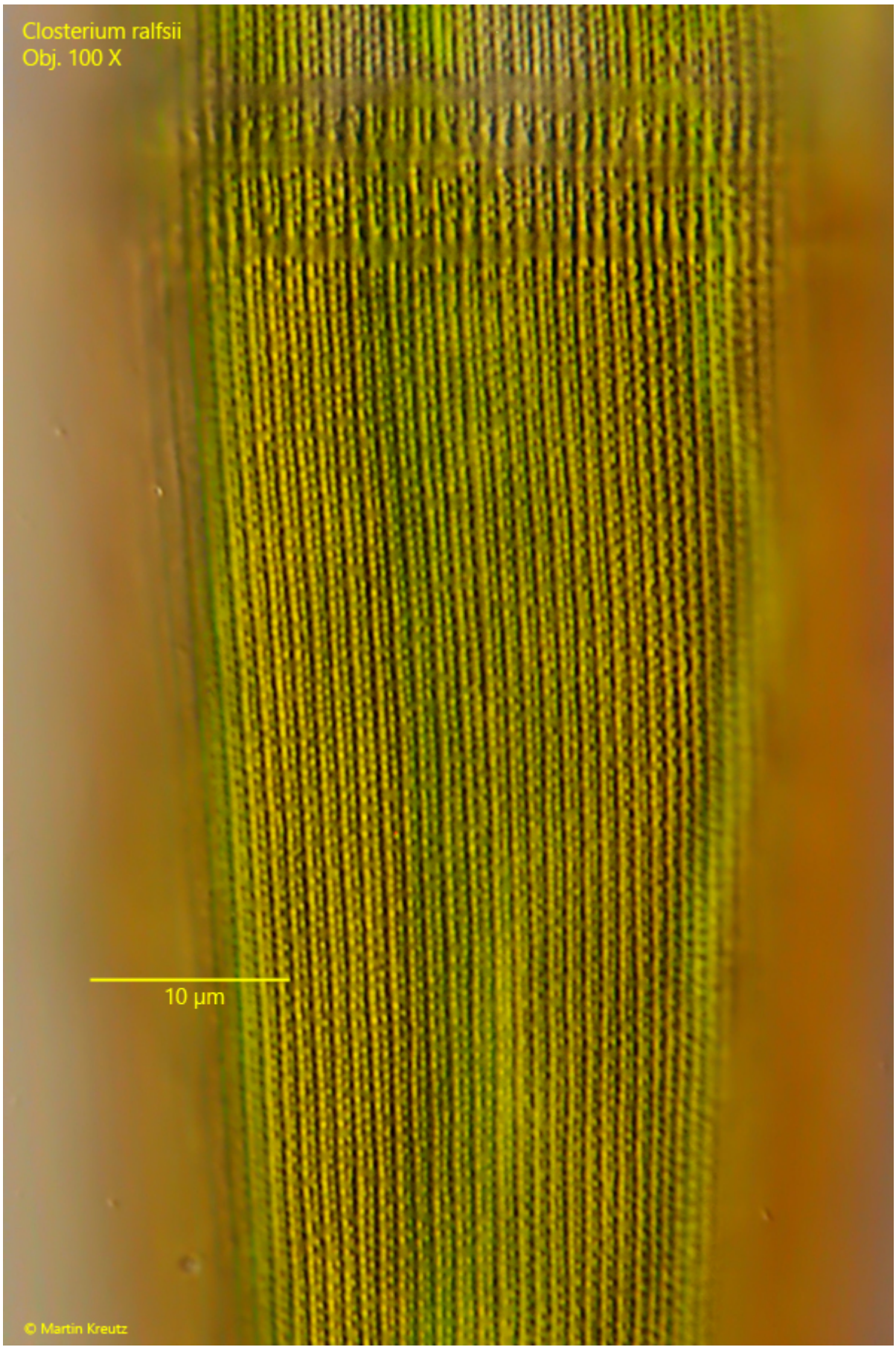

Fig. 3: *Closterium ralfsii*. Focal plane on the striation of the cell wall. The striation consists of punctate double rows. The number of stripes (double rows of dots) is 10

stripes/10 µm. Obj. 100 X.

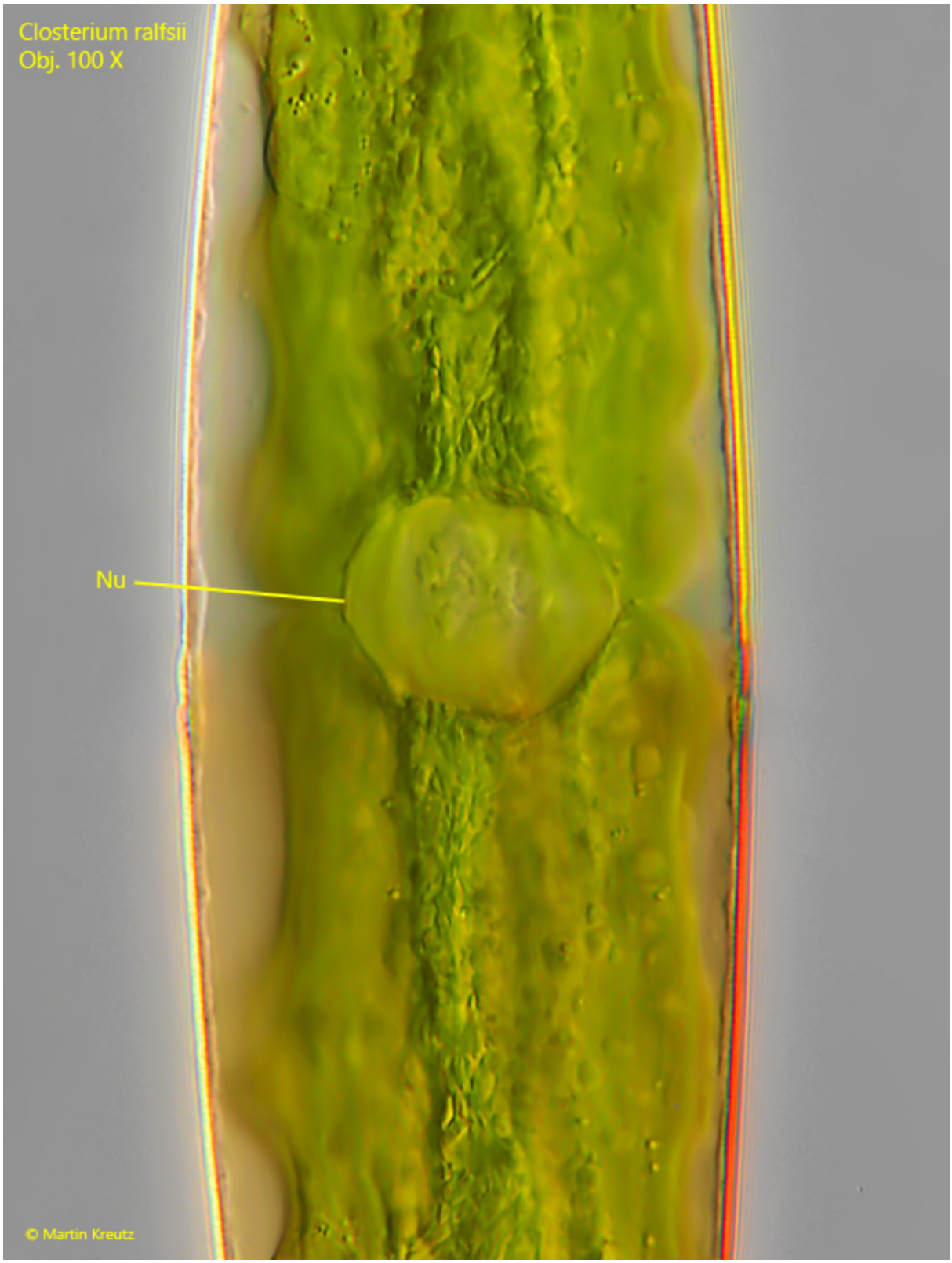

Fig. 4: *Closterium ralfsii*. The nucleus (Nu) in the center of the cell. Obj. 100 X.