Cryptomonas borealis Skuja, 1956

Most likely ID: n.a.

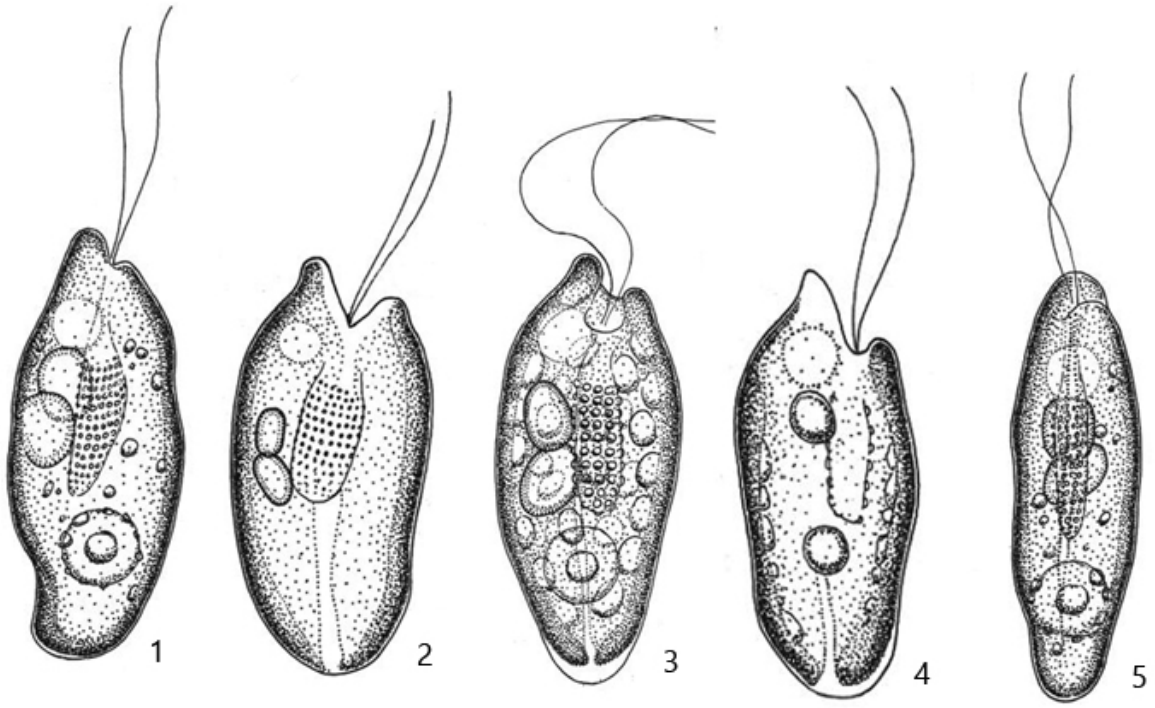
Synonyms: *Cryptomonas elongata*, *Cryptomonas inaequalis*, *Cryptomonas ornatofaux*, *Cryptomonas ovata var. sursumexstans*, *Cryptomonas rusti*, *Cryptomonas skujae*, *Pseudocryptomonas americana*

Sampling location: Purren pond, Simmelried

Phylogenetic tree: *Cryptomonas borealis*

Diagnosis:

- cells oval with undulated surface, sometimes slightly S-shaped, laterally flattened length 20–50 µm
- apical rostrum and widely opened gullet mouth
- gullet reaches about mid-body, covered with ejectisomes
- 1–3 prominent Maupas bodies
- pyrenoids absent
- nucleus in postorior third
- two chromatophores, olive-green or brownish
- two flagella of almost equal length
- numerous hexagonal or oval starch granules
- contractile vacuole below the apical rostrum



1 - 4 = lateral view, after Javornicky
5 = ventral view, after Javornicky

Cryptomonas borealis

I find *Cryptomonas borealis* regularly and frequently in Simmelried and Purren pond. This cryptomonad has a typical apical rostrum like the similar species *Cryptomonas curvata*. However, in *Cryptomonas curvata* the characterstic Maupas bodies are absent and *C. curvata* is not as laterally flattened as *Cryptomonas borealis*. A typical feature of *Cryptomonas borealis* is the widely open gullet mouth (s. fig. 1 b). In fact, the shape is somewhat reminiscent of a fish with an open mouth.

In my population I found specimens with a length of 30–58 µm. This is quite consistent with the range of 20–50 µm given by Javornický (2014). However, I found not only specimens corresponding to the drawings of Jarvonický (compare fig. 3 a-b with the drawings above) but also many specimens with a broadly rounded posterior end, which was flattened in a leaf-like manner (s. fig. 4 a-b), sometimes with a transparent rim (s. fig. 2 a-c). Despite this variability of the posterior end, the anterior end was always typically shaped.

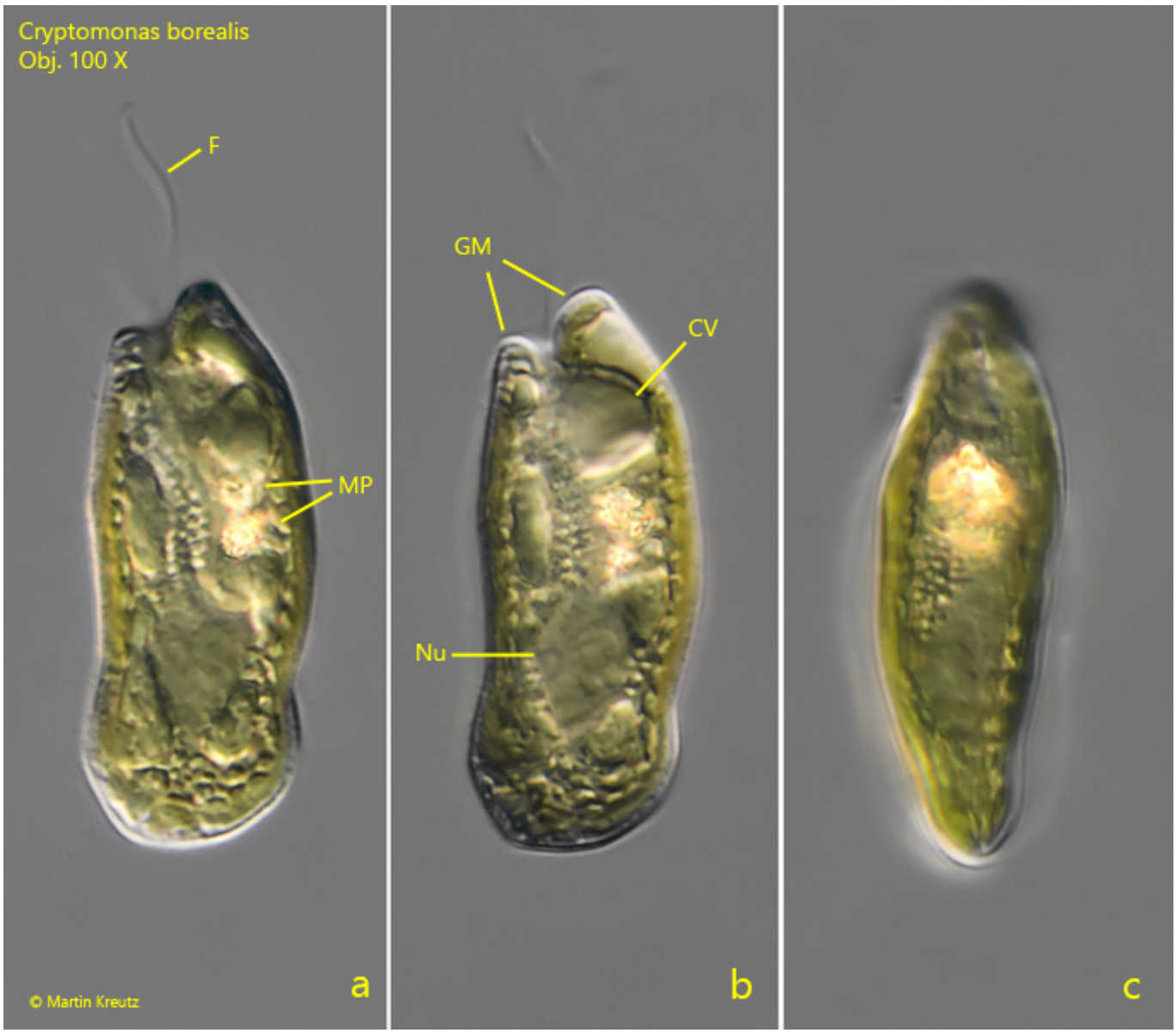


Fig. 1 a-c: *Cryptomonas borealis*. L = 54 µm. A freely swimming specimen from left (a, b) and from ventral. Note the widely open gullet mouth (GM) and that the species is laterally flattened (c). CV = contractile vacuole, MP = Maupas bodies, Nu = nucleus. Obj. 100 X

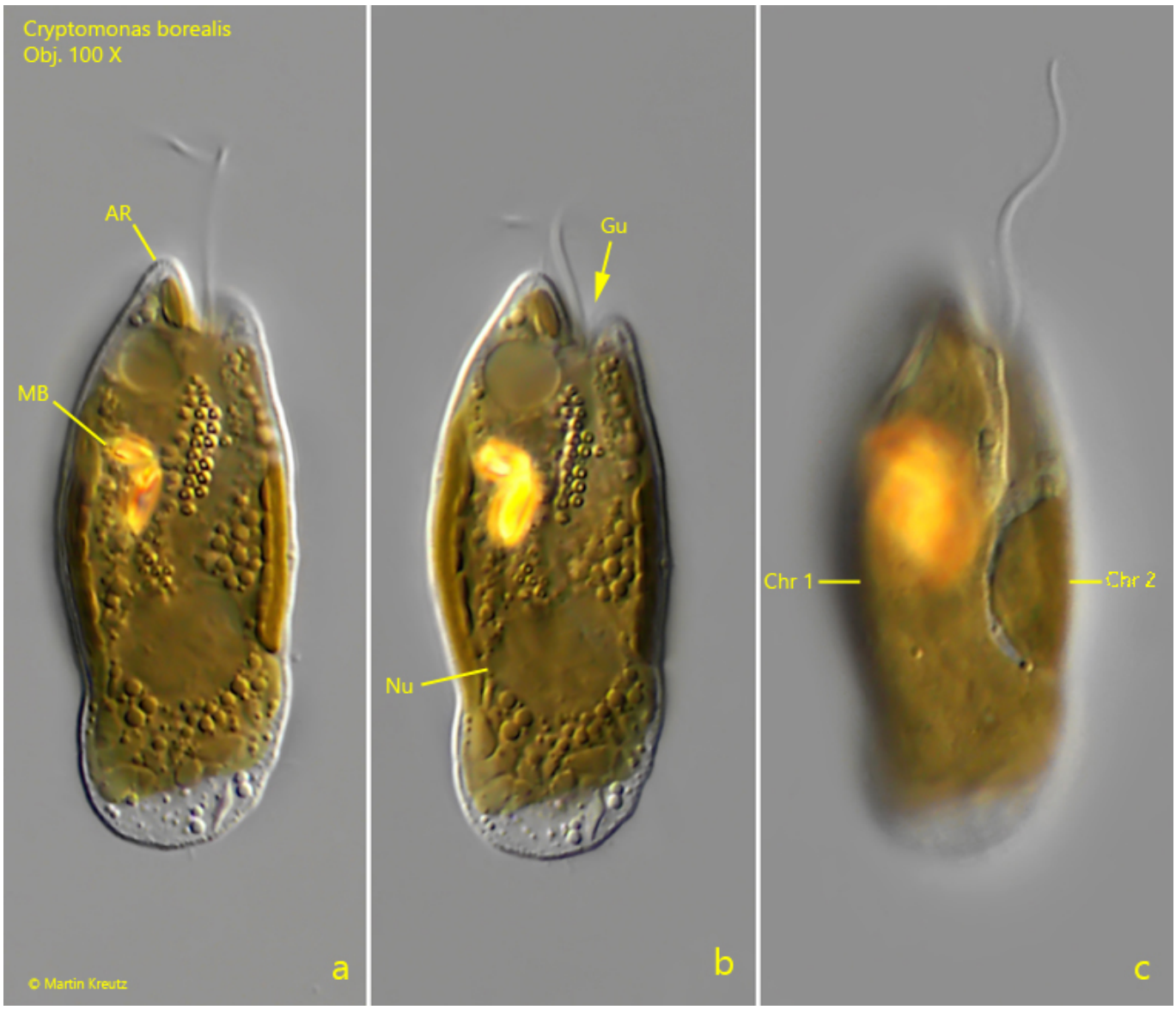


Fig. 2 a-c: *Cryptomonas borealis*. L = 43 µm. A second, freely swimming specimen from right. Note the apical rostrum (AP) and the two chromatophores (Chr 1, Chr 2). Gu = gullet, MB = Maupas bodies, Nu = Nucleus. Obj. 100 X.

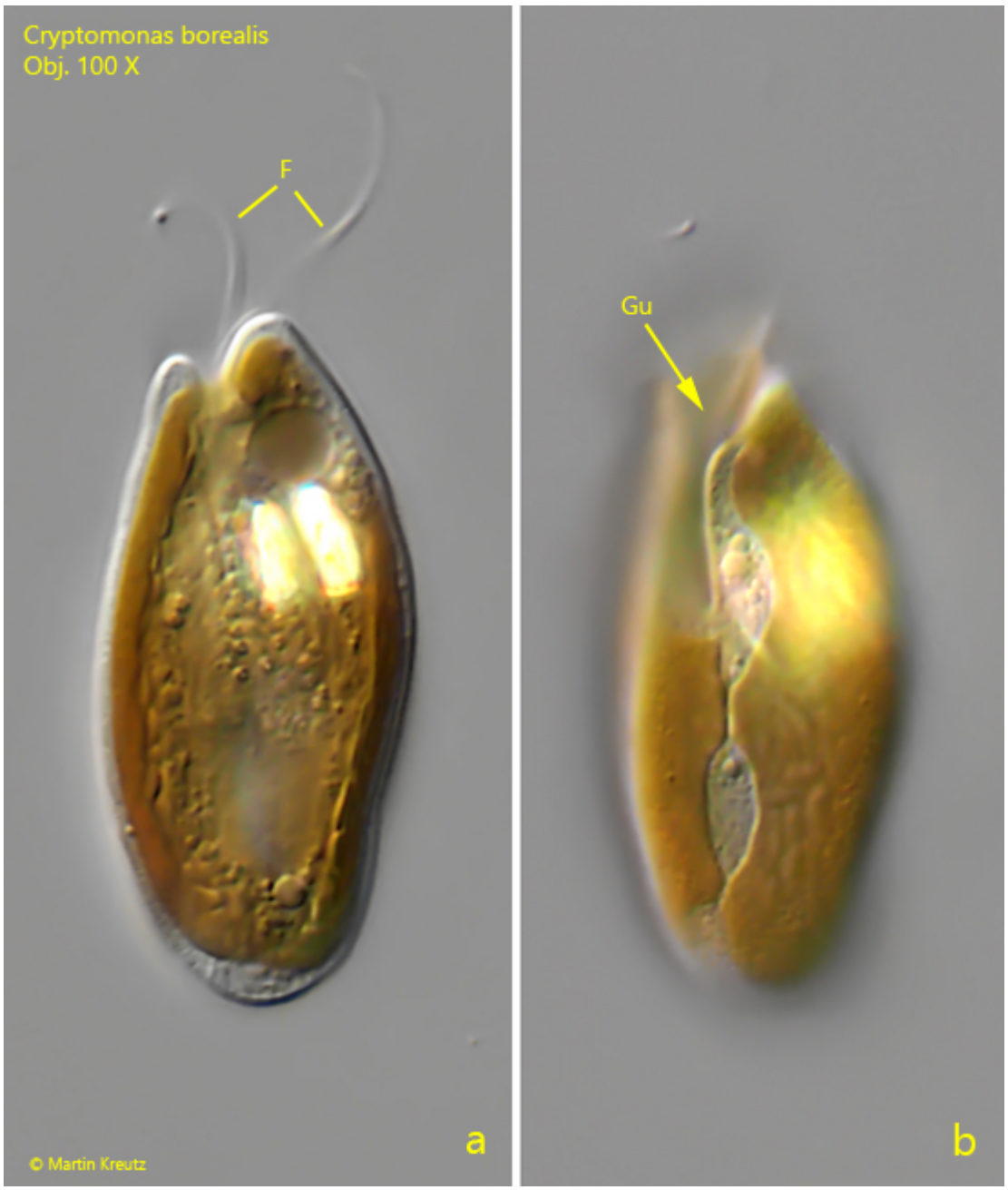


Fig. 3 a-b: *Cryptomonas borealis*. L = 38 µm. A third freely simming specimen from left. Note the furrow at the entrance of the gullet (Gu). Obj. 100 X.

Fig. 4 a-b: *Cryptomonas borealis*. L = 48 µm. A fourth specimen from left. Chr 1, Chr 2 = chromatophores, EJ = ejectisomes, SG = starch grains. Obj. 100 X.