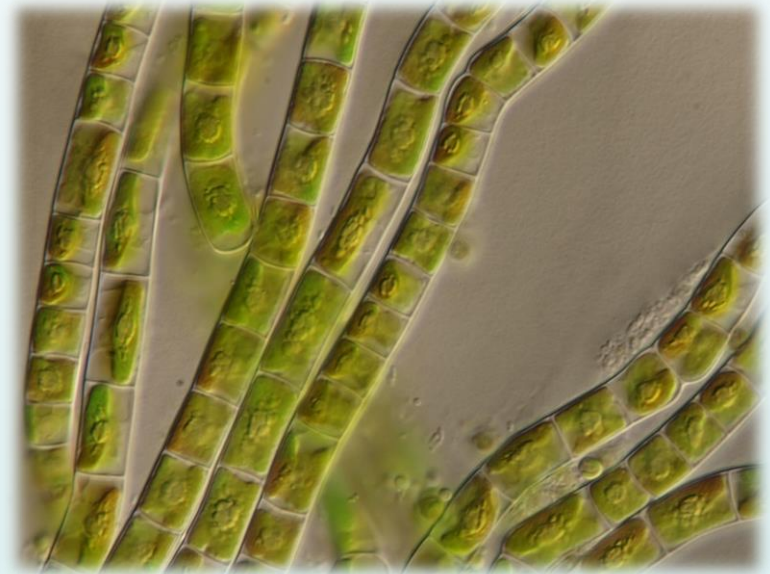
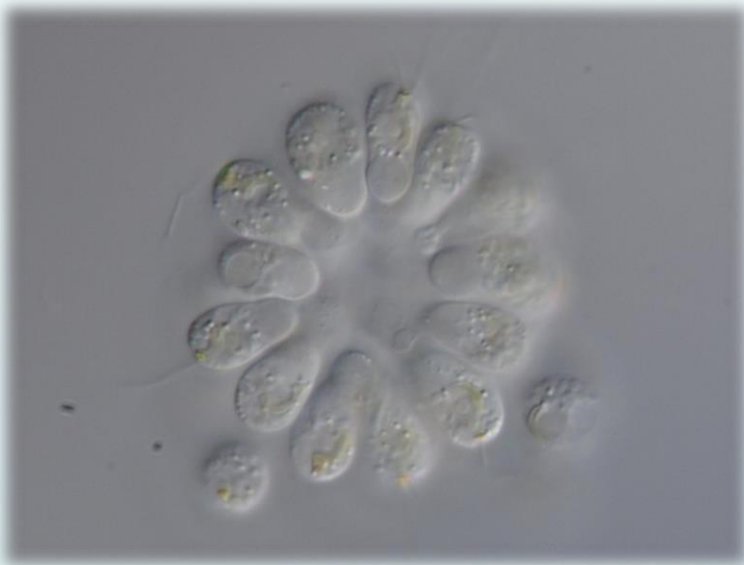


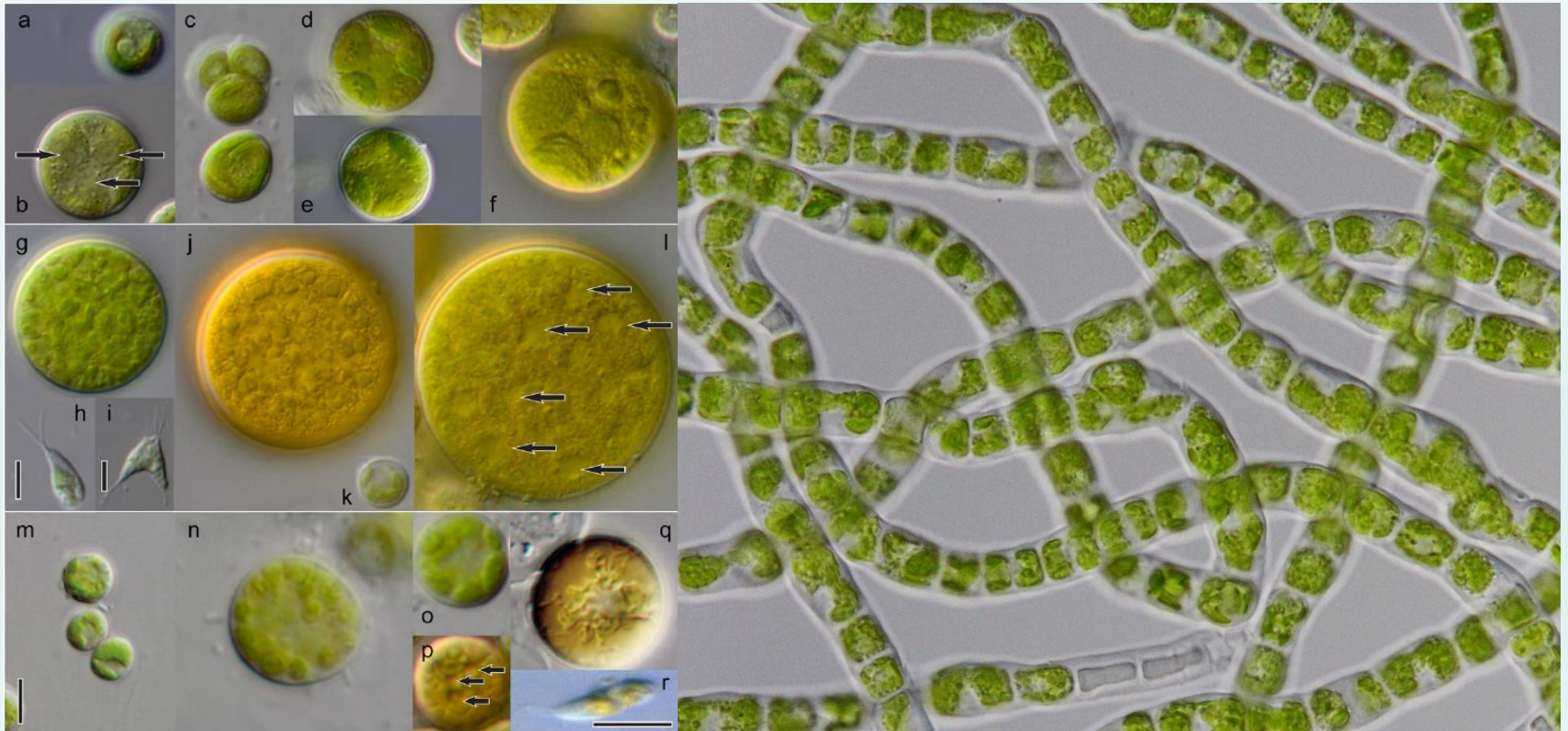
On searching for correct names in tiny algae



Pavel Škaloud, Martin Pusztai, Michala Klimešová, Fabio Rindi

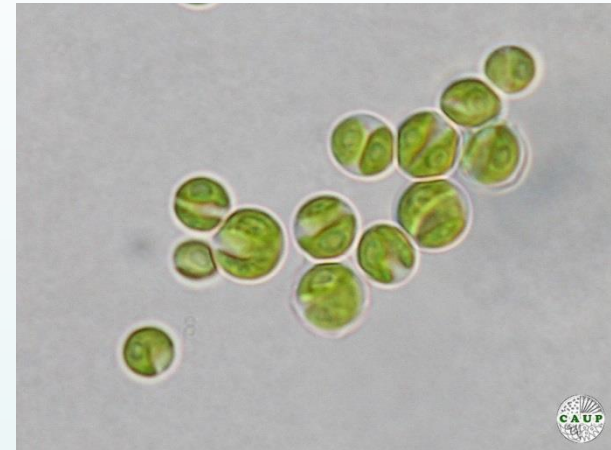
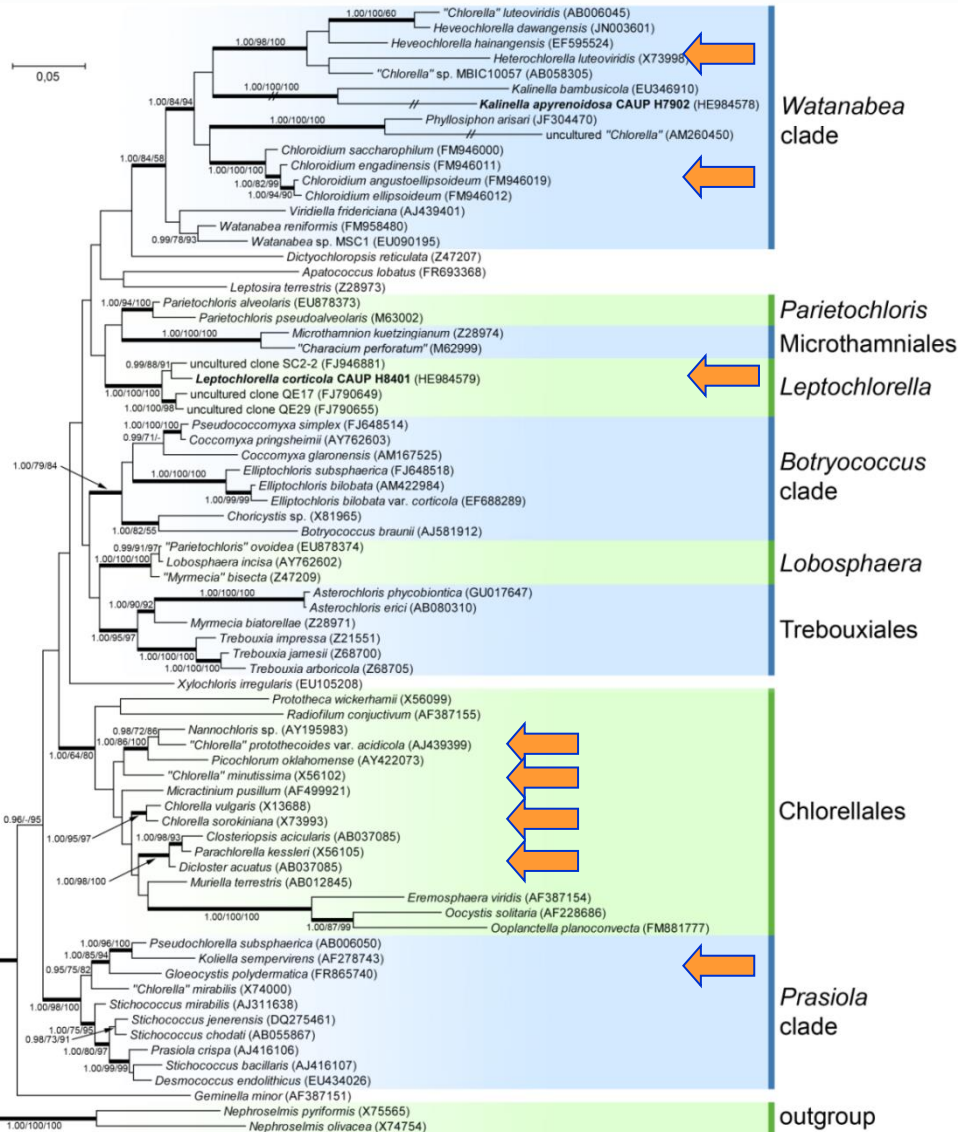
Microalgae

- Simple morphology
- Rampant morphological convergence across many lineages
- Several polyphyletic genera and species

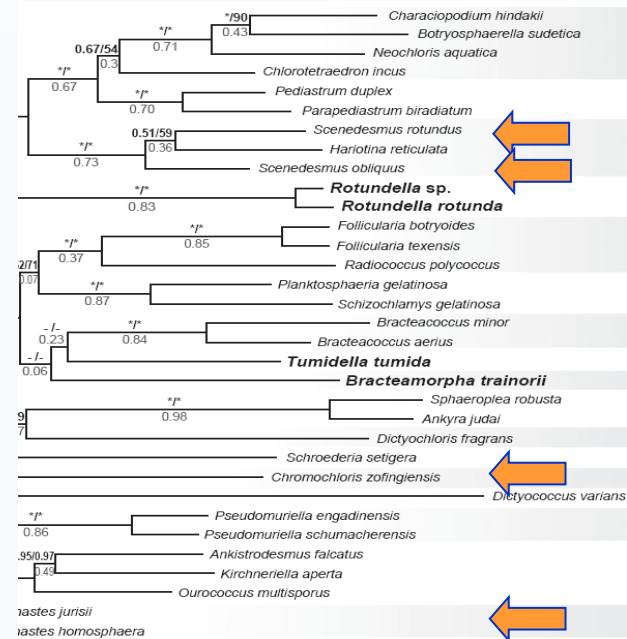


Chlorella – an example of polyphyletic genus

Trebouxiophyceae:

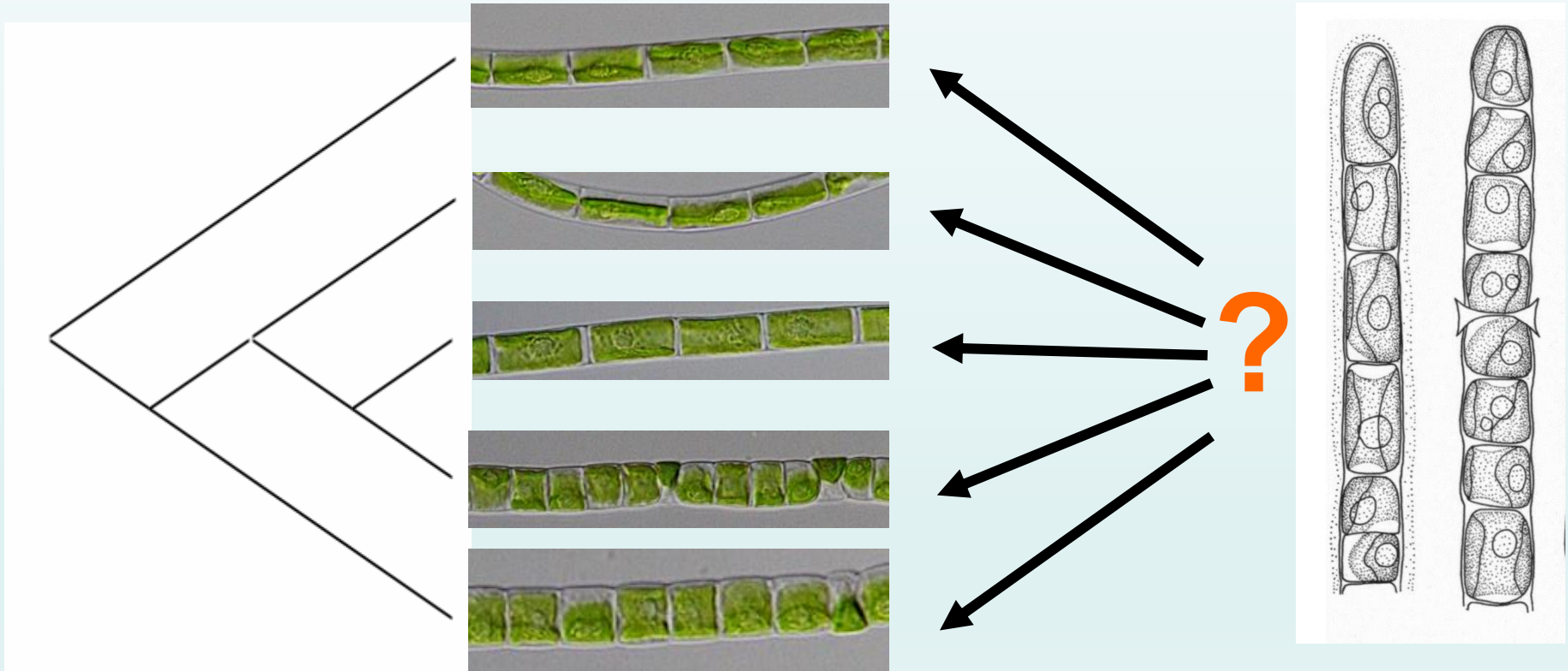


Chlorophyceae:



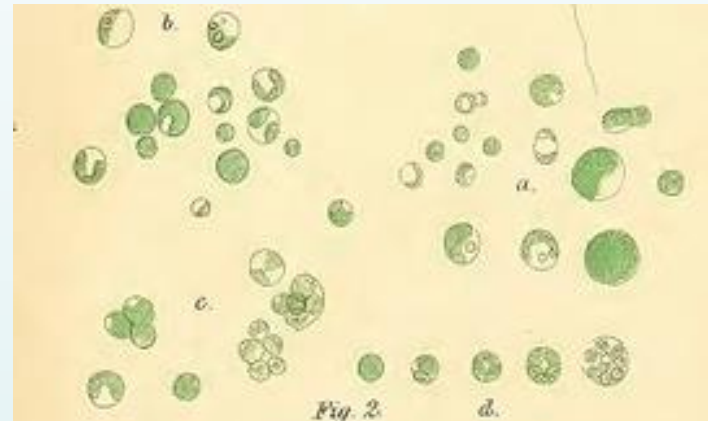
Resolving the polyphyly

- To apply correctly names of species and genera, we should link Linnaean names with clades recovered in molecular phylogenies



Taxonomic paralysis

- Many common green microalgae were described by early botanists (e.g., Linnaeus 1753; Agardh 1824; Kützing 1849) based only on morphological characters.
- No herbarium specimens
- No authentic cultures



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D

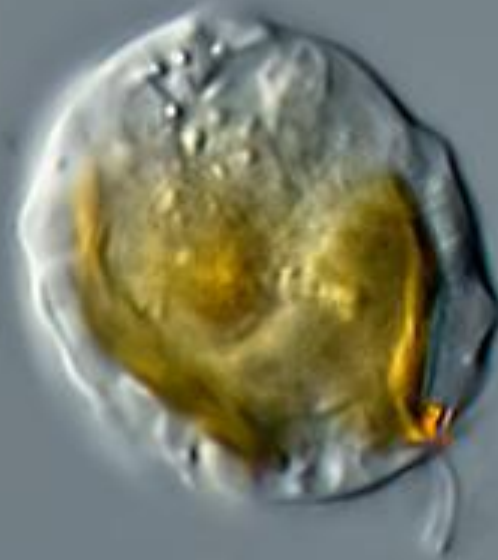
Serial No. _____
Class Chlorophyta
Genus Chlorella
Species Chlorella sp.

Common Name _____ Colour _____
Locality Oran District Raigad
State Maharashtra Substratum Rocky
Zone Intertidal Dep h _____
Exposure _____ Abundance _____
Cruise No _____ Station No. _____
Latitude _____ Longitude _____
Ecological Notes _____

Remarks _____
Collected by Vinod Nagle Identified by _____

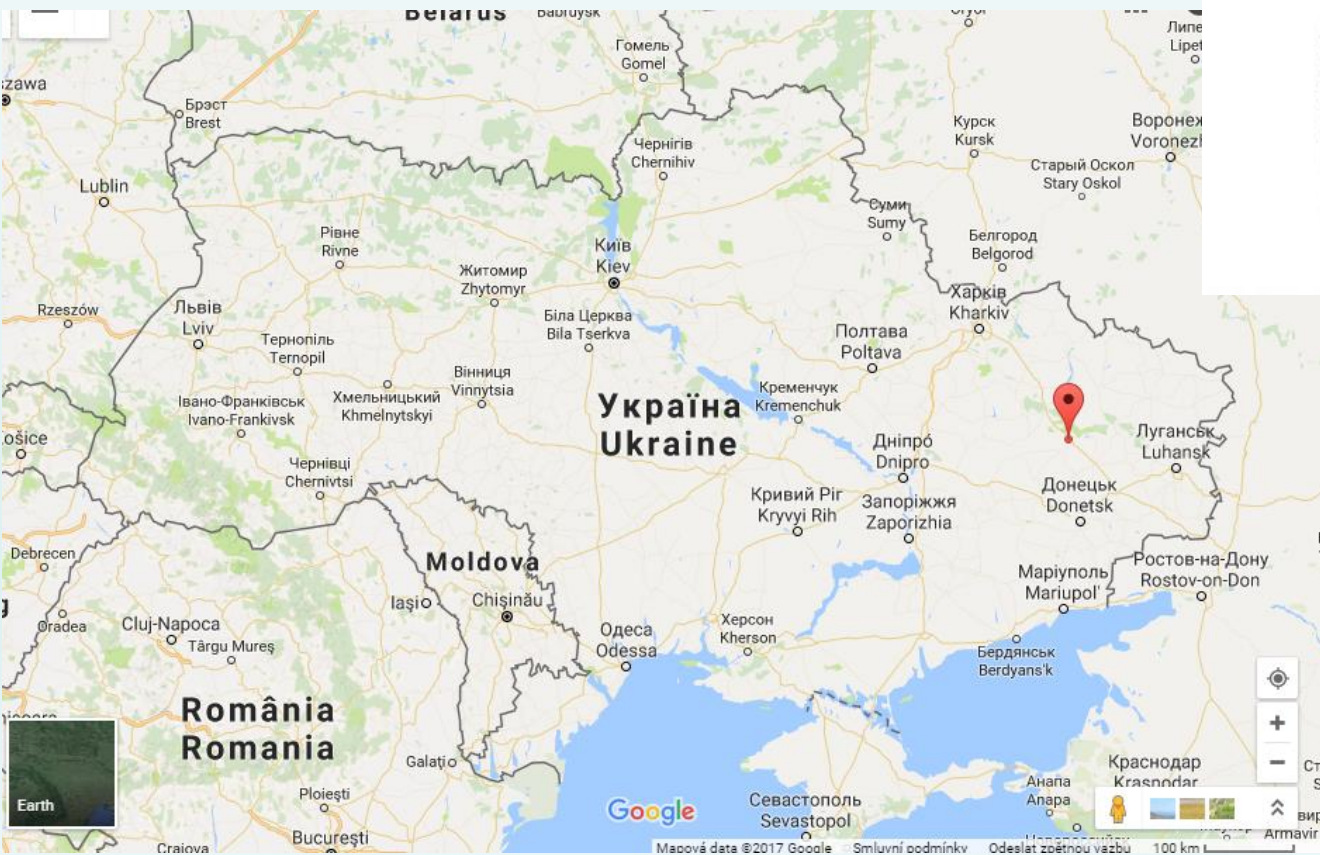
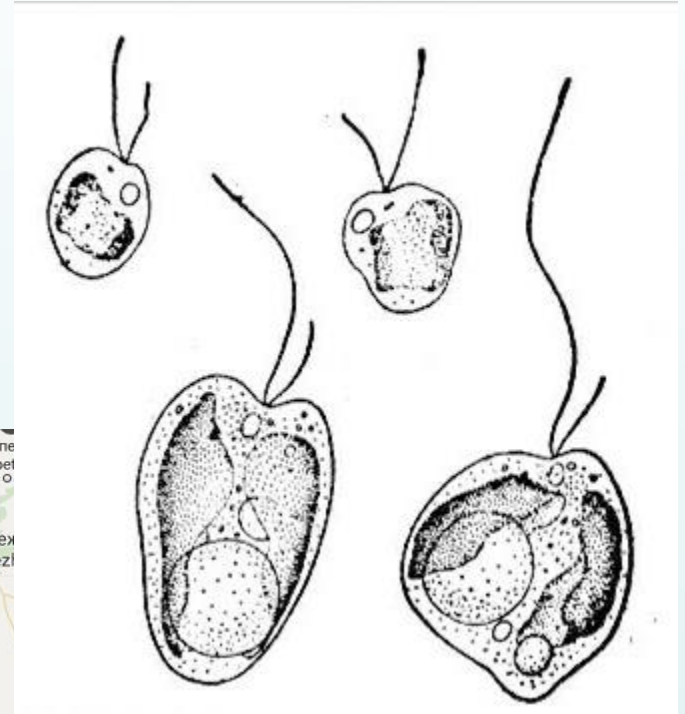
Type localities!

Ochromonas



Ochromonas

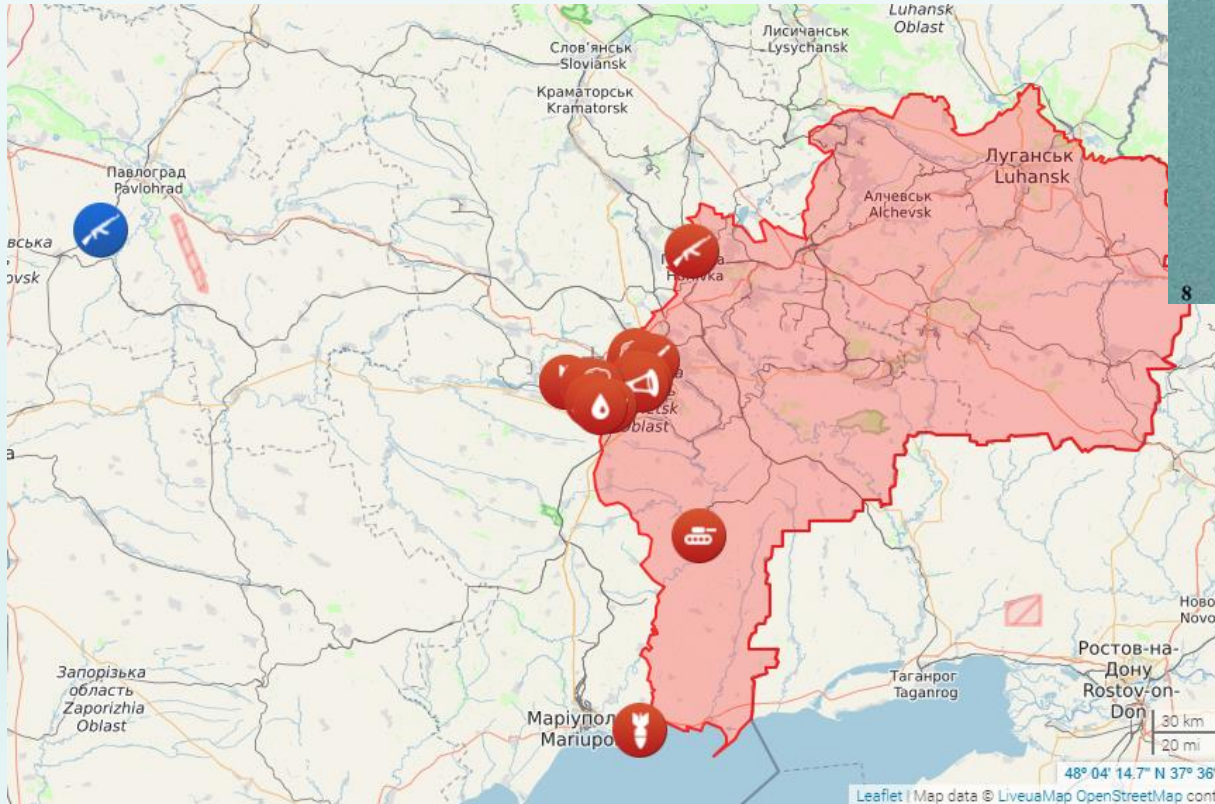
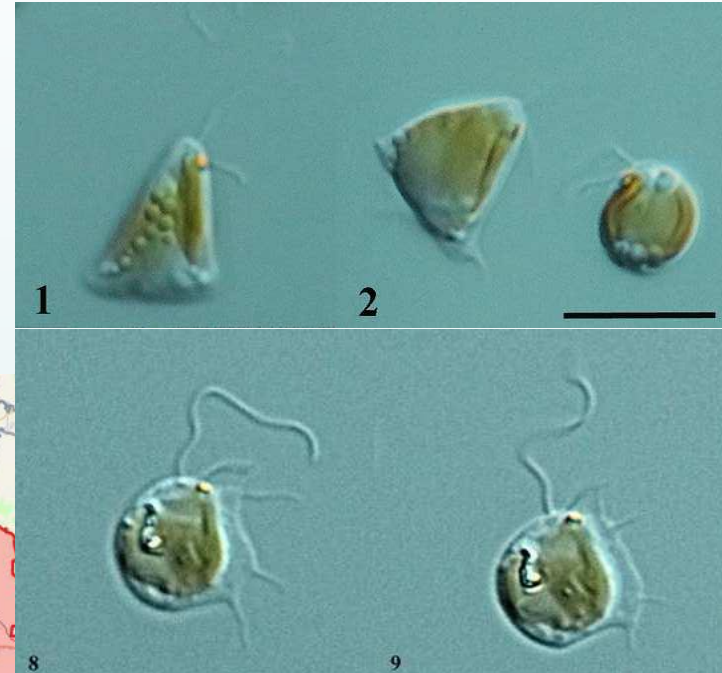
- *Ochromonas triangulata* Visotskii 1987
- Lake Veysove, Donetsk region, Ukraine



Louis Graf

Ochromonas

- *Ochromonas triangulata* Visotskii 1887
- Sampling: 3 November 2015



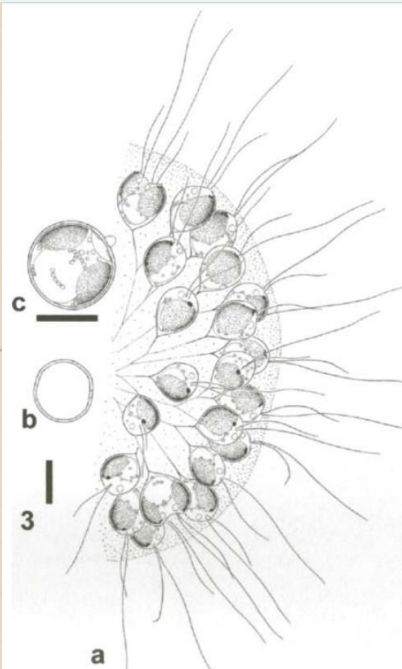
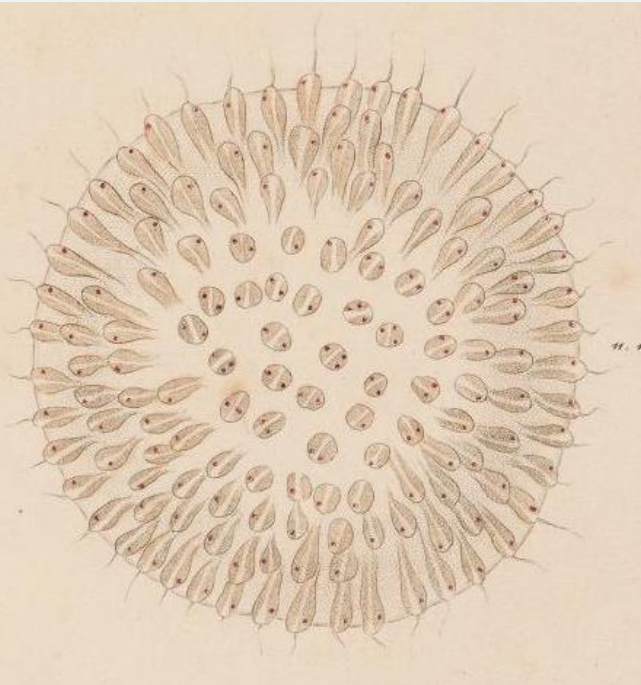
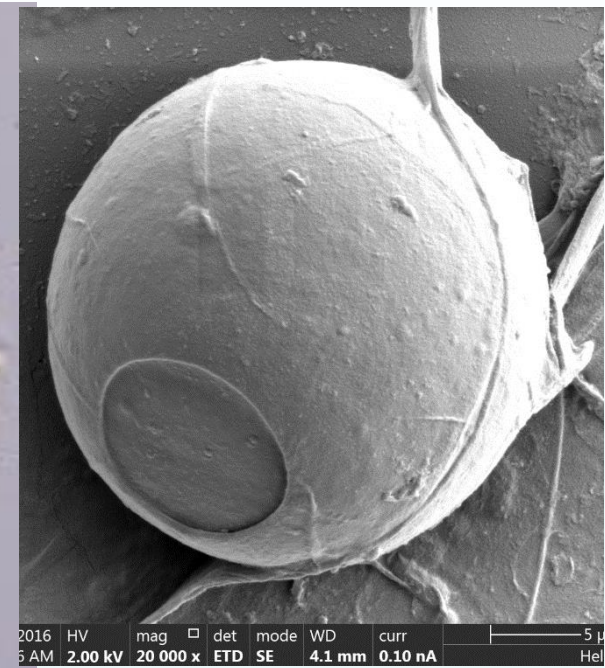
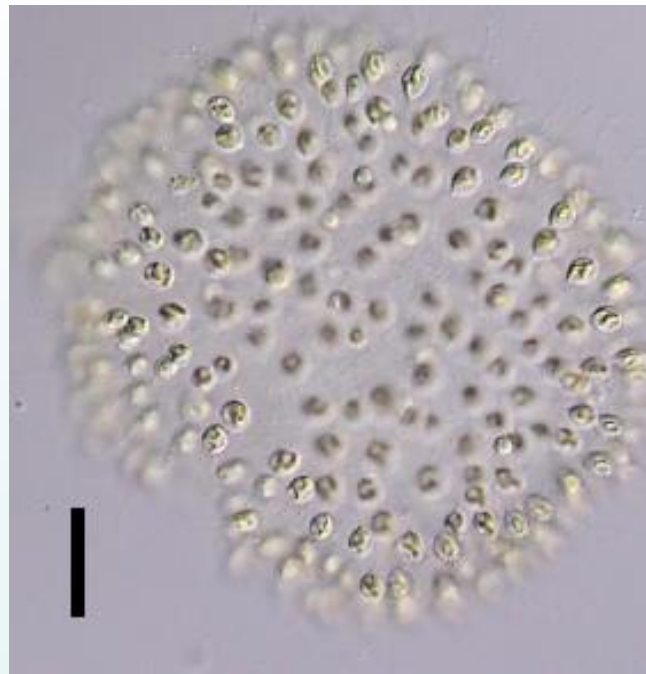
Uroglena



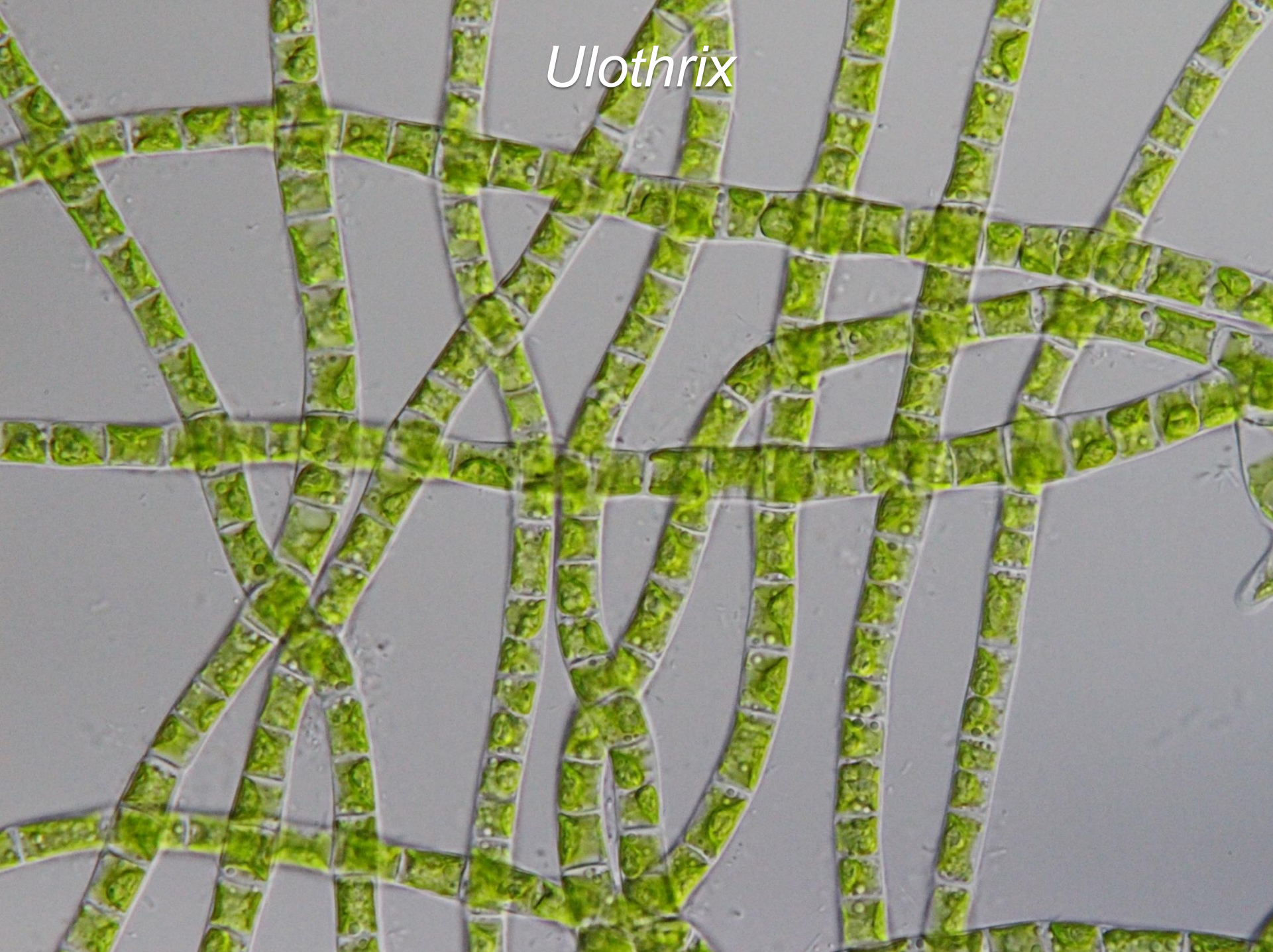
25 μ

Uroglena

- *Uroglena volvox*
Ehrenberg 1838
- A lake near Berlin,
Germany

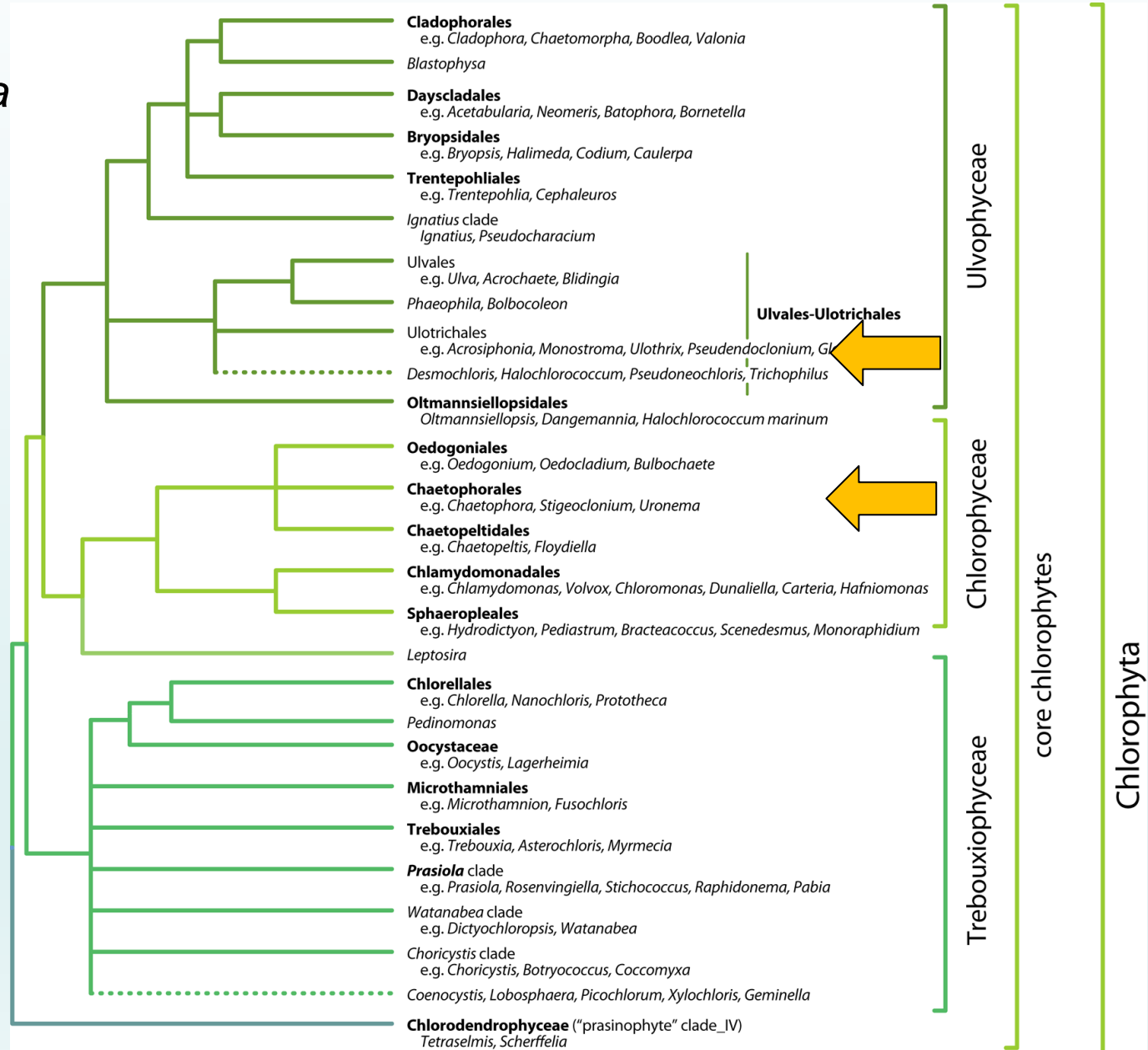
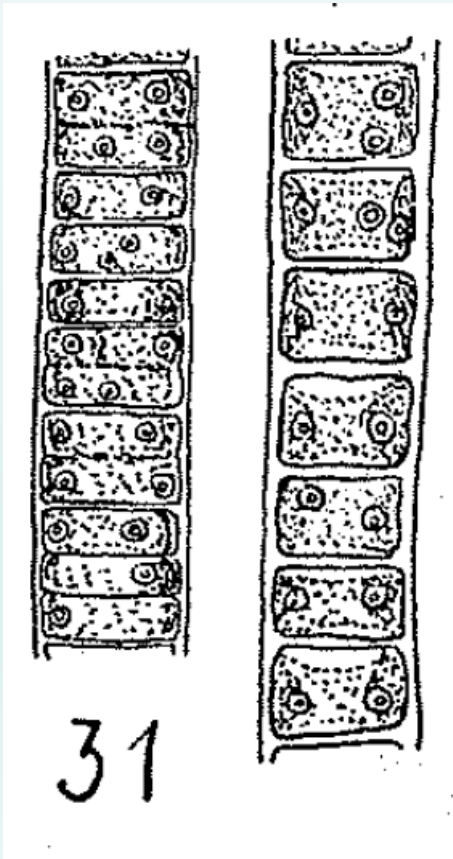


Ulothrix



Ulothrix

- *Ulothrix tenuissima*
Kützing 1833
- Timavo, Italy

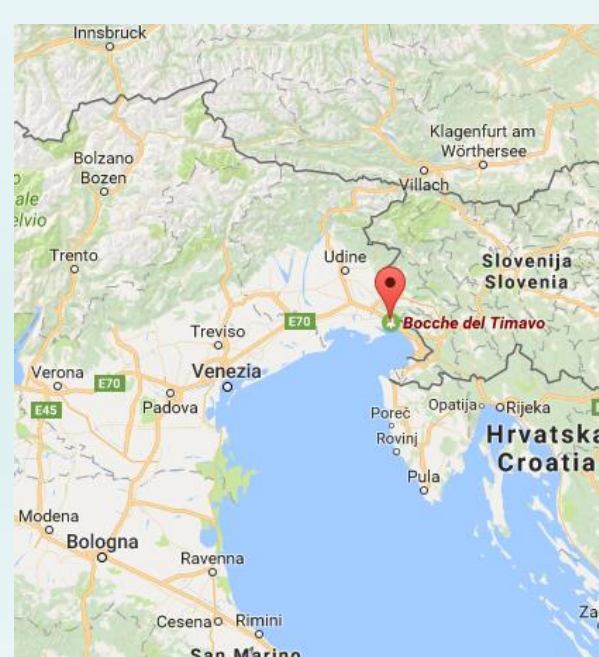
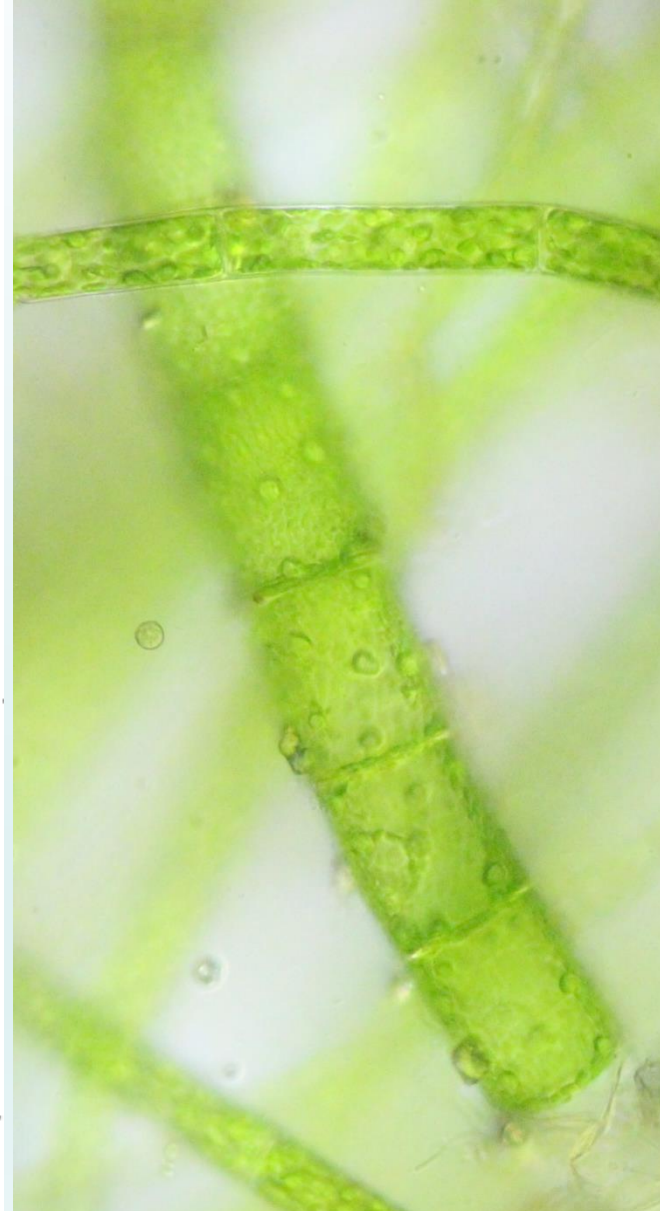
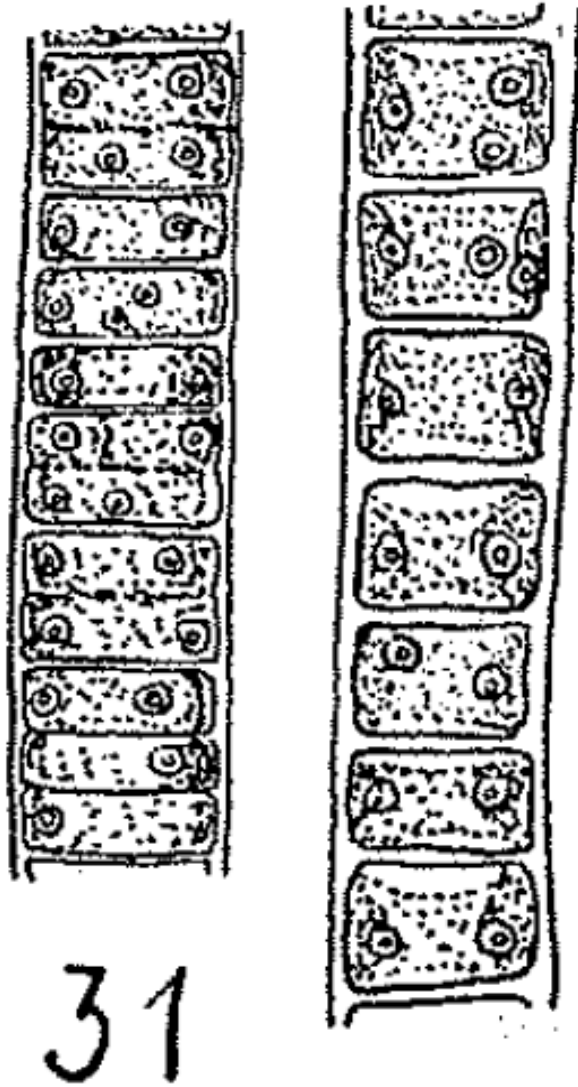




Timavo, Italy

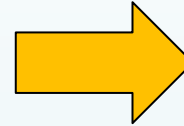
Ulothrix

- *Ulothrix tenuissima*
Kützing 1833
- Timavo, Italy

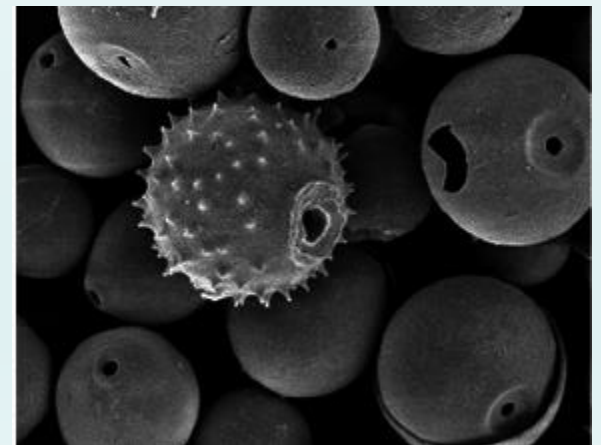
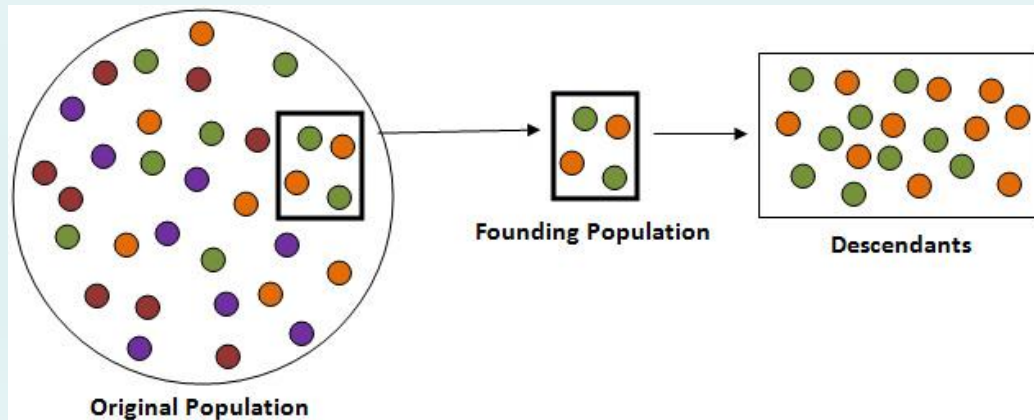


Type localities

- *Ochromonas triangulata* 1887 2015
- *Uroglena volvox* 1838 2016
- *Ulothrix tenuissima* 1833 2016



Despite enormous population sizes and unlimited dispersal
microalgae seems to be extremely stable in their habitats



Founder effect + resting propagule bank

The image shows a microscopic view of numerous green, spherical microorganisms, likely algae or protozoa, arranged in a grid pattern. Each organism is surrounded by a faint circular outline, possibly representing its cell wall or a measurement boundary. The organisms have a textured, granular appearance and are set against a dark, almost black background. The text "Thank you!" is centered in the middle of the image in a white, sans-serif font.

Thank you!