

Cyanobacterial diversity of five selected thermal springs in Serbia

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INTRODUCTION

- **Thermal springs** are unique habitats with distinct physico-chemical parameters.
- These environments harbor **diverse microorganisms**, particularly **Cyanobacteria**, which offer insights into **ecological, evolutionary processes**, and have various **biotechnological** applications.

Study Locations

- **Central Serbia:** Bukovička Spa, Vrujci Spa, Omoljica, Poljane and Ovčanska Spa.
- Sampling conducted in **November-December 2023**.



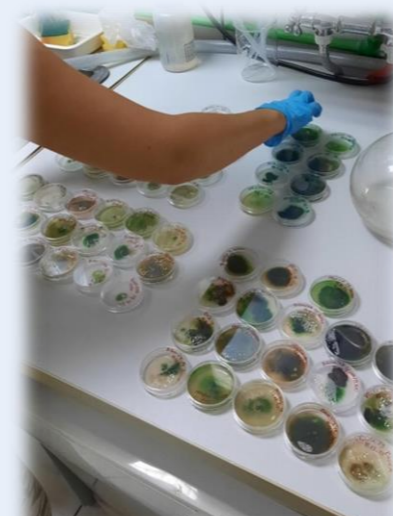
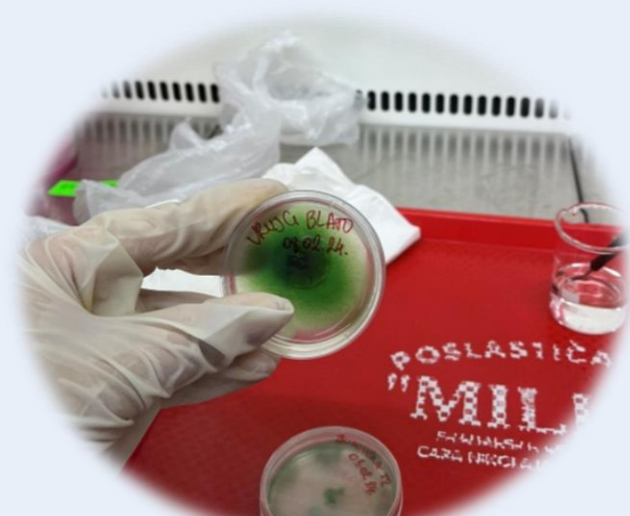
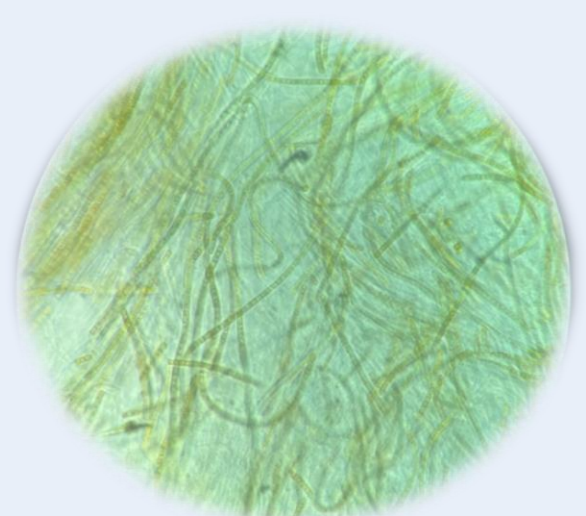
Omoljica thermal spring



Poljane thermal spring

METHODS

- **On-site measurements:** temperature, pH, conductivity, oxygen content and total dissolved solids.
- **Sample Collection:** Phototrophic biofilms were collected from **water discharge points, sediments, and moist sites**.
- **Cyanobacteria identification:** Microscopy examination and **molecular analysis** of isolated representatives.



Preparation, observation and cultivation of Cyanobacteria

RESULTS & DISCUSSION

- Over **15 cyanobacterial genera** identified.

Bukovička and Vrujci Spa:

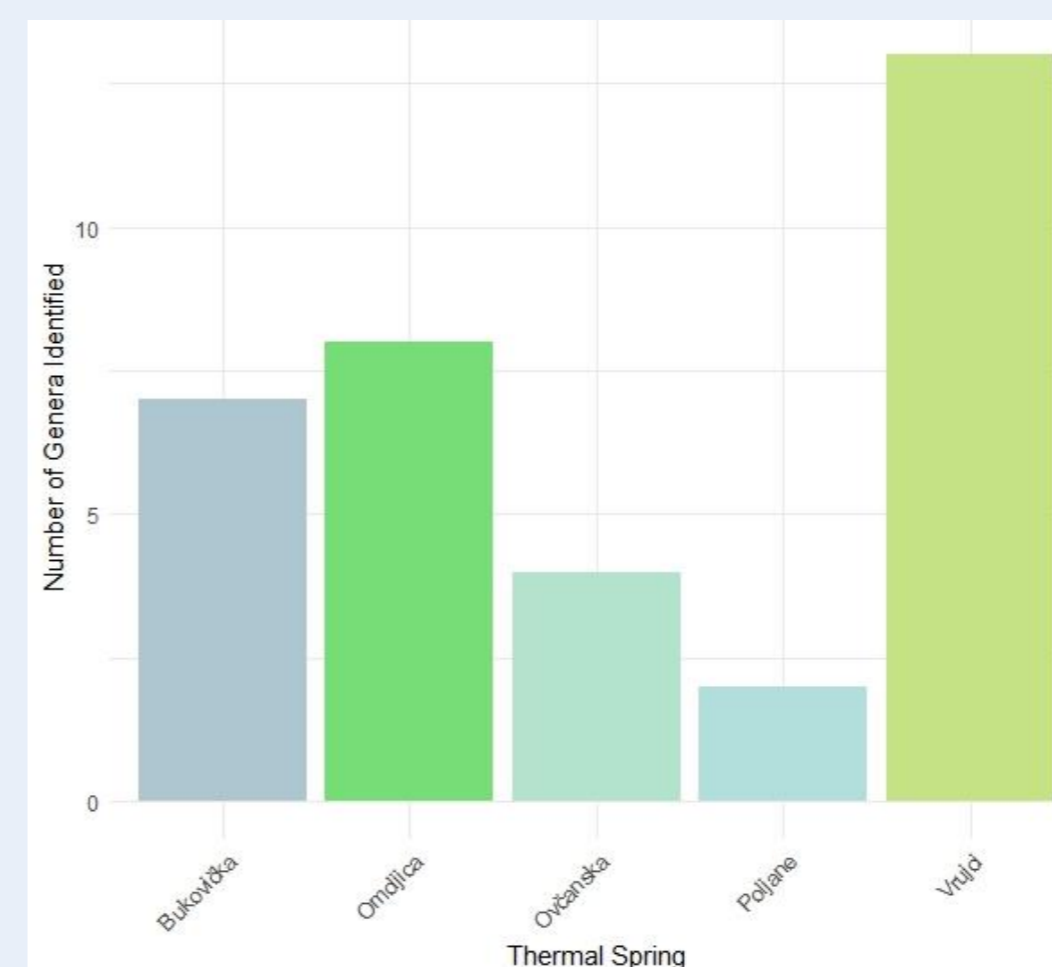
- Coccoid forms like *Aphanocapsa*, *Chroococidiopsis*, *Gloeocapsa*, and *Synechococcus*.

Poljane:

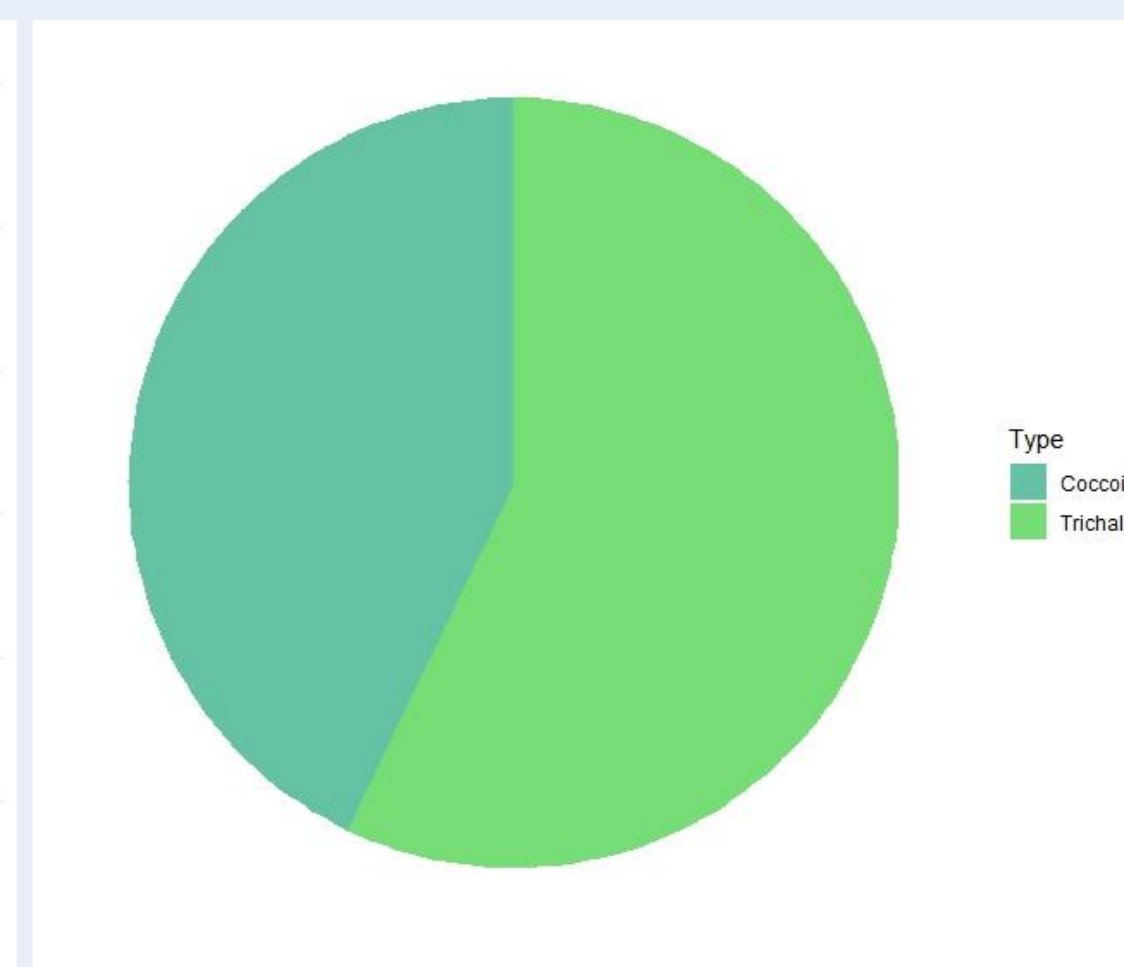
- Unique trichal forms with unusual morphology and **colored granules**.

Other Locations:

- Trichal forms like *Phormidium*, *Jaaginema*, *Leptolyngbya*, and *Oscillatoria*.



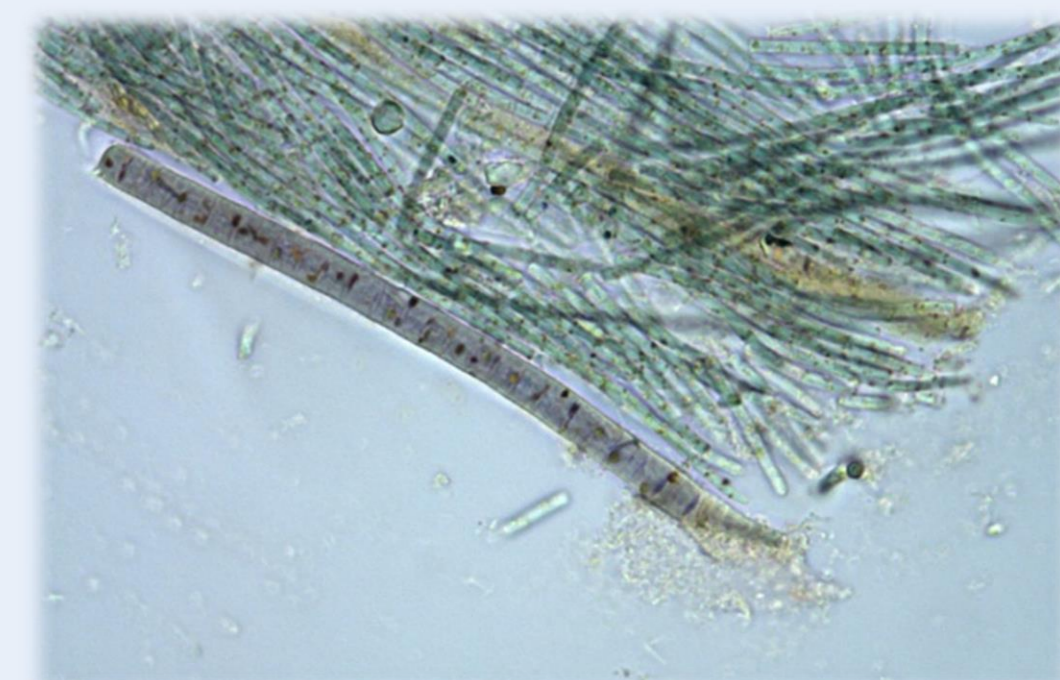
Cyanobacterial genera by location



Cyanobacterial morphological types



Trichal form: *Porphyrosiphon notarisi* (left); *Anagnostidinema amphibium* and *Phormidium* sp (right)



CONCLUSION

- Serbia's thermal springs are underexplored.
- Potential for discovering **rare Cyanobacteria species** with ecological and biotechnological properties.

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