



The Balkan Botanical Congress is an international meeting that has been held nearly every three years, since 1997. It brings together botanists from around the world who perform research on plants in the widest sense, as well as scientists who are engaged in the plant sciences and their applications. We were honored to host such an extraordinary scientific event this year in Serbia.

The 7th Balkan Botanical Congress – 7BBC 2018 took place in Novi Sad from September 10th to 14th 2018. The Congress was organized by the University of Novi Sad, Faculty of Sciences, Department of Biology and Ecology and the “Andreas Wolny” Botanical Society, along with the great help of 7 co-organizers and more than 30 supporters and sponsors. It truly was not possible to happen without exceptional help of our co-organizer - the Institute for Nature Conservation of Vojvodina Province who made this congress not only possible, but totally awesome.

7BBC 2018 placed a special emphasis on plants of the Balkan Peninsula and covered various research fields. The Congress was organized into ten sessions: Plant Anatomy and Physiology, Plant Taxonomy and Systematics, Plant Molecular Biology and Genetics, Floristics, Vegetation and Phytogeography, Conservation Botany and Plant Invasions, Phytochemistry and Plant Resources, Agronomy and Forestry, Botanical Collections and History, Ethnobotany and Cryptogam Biology. These topics were elaborated through five plenary lectures given by eminent scientists, as well as in the form of introductory lectures, oral and poster presentations. With an overall number of 387 abstracts presented on the very latest of botanical science, we shared knowledge, expertise and novel ideas. We welcomed nearly 400 scientists to Novi Sad, and we believe that we succeeded in our joint endeavor to make new networks and new connections among botanists. We hope that we contributed to advancements in the wide and beautiful field of botany, ranging from fundamental botanical research to applied botany.

It is our great pleasure to publish this Abstract Book in Botanica Serbica, in the same year that this international journal, a renamed continuation of the Bulletin of the Institute of Botany and Botanical Garden Belgrade, celebrates its 90 year jubilee. On behalf of the Scientific and Organizing committee of 7BBC 2018 we would like to express our gratitude to all contributors, colleagues and sponsors for taking part in the 7th Balkan Botanical Congress, as well as for their efforts and contributions to it's successful realization.

Goran Anačkov and Lana Zorić,  
Co-presidents of the Scientific Committee of the 7 BBC  
and guest editors of Botanica Serbica 42 (supplement 1).

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### Sessions:

**The 7th Balkan Botanical Congress consists of plenary lectures, introductory lectures of each session, as well as oral and poster presentations on the following topics:**

**Sessions 1.** Plant Anatomy and Physiology

**Sessions 2.** Plant Taxonomy and Systematics

**Sessions 3.** Plant Molecular Biology and Genetics

**Sessions 4.** Floristics, Vegetation and Phytogeography

**Sessions 5.** Conservation Botany and Plant Invasion

**Sessions 6.** Phytochemistry and Plant Resources

**Sessions 7.** Agronomy and Forestry

**Sessions 8.** Botanical Collections and History

**Sessions 9.** Ethnobotany

**Sessions 10.** Cryptogam Biology



Poster presentation 29 10 12

### THE RELATIONSHIP BETWEEN EPILITHIC DIATOM COMMUNITIES AND ECOLOGICAL STATUS OF THE RADOVANSKA RIVER (SERBIA)

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Rivers and streams are one of the most endangered ecosystems in the world, so it is necessary to assess the ecological status and continuous monitoring of these ecosystems. Anthropogenic effects, but also many inorganic processes such as erosion, degrade surface waters. This affects ecological integrity and the functioning of freshwater ecosystems, and thus disables their use. This has resulted in the creation and use of diatom indices worldwide based on diatom communities. Assessment of the ecological status of the Radovanska River based on the epilithic diatom communities and diatom indices as well as consideration of the efficiency of their use in the assessment of the ecological status of the rivers in Serbia were the main aims of this work. Epilithic diatoms were sampled at 5 sampling sites along the Radovanska River, during 2011-2012 by scraping from stones with a toothbrush. The relative abundance of taxa was determined by counting 400 valves on each slide after diatom frustules cleaned using strong acids and making permanent slides. Values of diatom indices were obtained using the OMNIDIA software. Canonical correspondence analysis (CCA) grouped the diatom taxa into three main clusters based on the physico-chemical parameters. The first cluster included taxa significantly positively correlated with nitrates. These were: *Achnanthydium catenatum*, *Coconeis pediculus*, *Gomphonema exilissimum*, *Luticola mutica*, *Nitzschia archibaldi*, *Staurosira mutabilis*, *Surirella angusta*. The second cluster (*Adlafia minuscula*, *Mayamaea permitis* and *Navicula antonii*) involved taxa which showed positive correlation with oxygen. *Cymbella compacta*, *C. excisa*, *C. parva*, *Encyonema minutum* and *Gyrosigma acuminatum* made up the third cluster and were significantly positively correlated with total phosphorus. Most indices indicated good and high ecological status of the Radovanska River. In Serbia, two diatom indices (Specific Pollution Index-IPS and European Economic Community Index-CEE) are a mandatory parameter in assessing the ecological status/potential of surface waters. According to our legislation and based on phytobenthos, the ecological status of the Radovanska River is assessed as high.

**KEYWORDS:** diatom indices, epilithic diatom communities, bio-monitoring, ecological status

Poster presentation 30 10 23

### CHANGES IN THE DIATOM COMMUNITY STRUCTURE AND IMPACT ON WATER QUALITY FROM 2005-2017 - GREAT LAKE (LURË NATIONAL PARK, ALBANIA)

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Great Lake is the largest of the 6 lakes situated in the eastern part of Lura Mountain in the Lurë National Park. Samples were collected in July 2005, June and August 2013 and August 2017. In 2005 and August 2013 epiphytic samples were collected from one locality, while in Jun 2013 was collected epilithic sample. However, in August 2017 no macrophytes were found which caused the collection of epilithic samples from 6 localities (LM1-LM6) around the lake with the aim of establishing ecological status. After laboratory analysis 52 taxa were identified in July 2005, 67 in June 2013 and 111 in August 2013. In August 2017 the number of identified taxa was higher, in total 126 taxa. Dominant taxa in July 2005 were *Achnanthydium minutissimum* (13.01%), *Diatoma vulgare* (13.84%) and *Meridion circulare* (11.76%). *A. minutissimum* was also dominant in 2013 (22.26% in June and 21.48% in August). In 2017, dominant taxa differed among localities: LM1 *Cyclotella cretica* var. *cyclopuncta* (29.38%), LM2 and LM3 *Encyonopsis microcephala* (21% at both sites), LM4 *Cyclotella cretica* var. *cyclopuncta* (17.41%) and *Encyonopsis krammeri* (18.91%), LM5 and LM6 *A. minutissimum* (27.79% and 30.47%, respectively). The genera *Diatoma*, *Epithemia*, *Fragilaria* and *Surirella* were not recorded in 2017, contrary to previous years. The ecological status of the Great Lake was assessed by using diatom indices. Most European countries have established lake assessment systems based on diatoms. However, the Albanian National Monitoring System does not include biological parameters and therefore no officially accepted diatom index is in place. We compared the values of IPS (Indice de Polluo-sensibilité) and TDIL (Trophic Diatom Index for lakes) indices using boundary values given by the authors. Values of IPS index indicated very good water quality in all years at all sites, while the TDIL indicated moderate water quality in 2005 and 2013 and good water quality in 2017. The reason for this deviation probably is the low relative abundance of indicator species used to calculate TDIL index. The TDIL was developed 2007 in Hungary, and it includes significantly fewer indicator taxa than the IPS. More comprehensive ecological investigations of lakes in Albania are necessary to be able to fulfill the demands of the Water Framework Directive.

**KEYWORDS:** diatoms, Lurë National Park, Great Lake, IPS, TDIL

Poster presentation 31 10 11

### SMALL RIVERS – SOURCE OF HIGH DIATOM DIVERSITY: CASE STUDY OF THE CRNICA RIVER (SERBIA)

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Diatoms (Bacillariophyta) are widespread in different types of aquatic ecosystems, often with high abundance. They are one of the most important producer and ecologically important groups in rivers and streams. Therefore, represent significant elements in biodiversity and ecosystem researches. Detailed floristic analysis of benthic diatoms from the Crnica River has not been conducted before. The main aim of this work was to investigate the diversity and seasonal dynamics of epilithic diatom assemblages. Studies were conducted during 2011-2012 on the Crnica River, a right-side tributary of the Velika Morava River. Diatom frustules were cleaned using concentrated sulfuric acid (H<sub>2</sub>SO<sub>4</sub>), potassium permanganate (KMnO<sub>4</sub>) and oxalic acid. Permanent slides were made by Naphrax mounting medium, while the relative taxa abundance was determined by counting 400 valves on each slide. The diatom flora identified in the Crnica River was taxonomically diverse and included a total of 170 taxa representing 49 genera. The most frequent taxa found in almost all samples were: *Achnanthydium minutissimum*, *A. pyrenaicum*, *Amphora pediculus*, *Cocconeis placentula* var. *lineata*, *Gomphonema elengatissimum*, *Meridion circulare* and *Reimeria sinuata*. 24 taxa were defined as dominant. Their percentage contribution was 5% or more at least at one investigated site. Many of them were the most frequent taxa, also. During the investigated period, the highest number of taxa was recorded in the spring (139), and the lowest in autumn (94). Canonical correspondence analysis showed that a large number of taxa was only characteristic for the spring or winter period.

**KEYWORDS:** diatoms; biodiversity; floristic analysis; seasonal dynamics

Poster presentation 32 10 22

### DIVERSITY OF DIATOM COMMUNITIES IN THE VELIKA RUSANDA SODA PAN

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Species richness and diversity of diatoms inhabiting different niches (water column, sediment surface and submerged plants) as well ionic composition of water (Na<sup>+</sup>, K<sup>+</sup>, Mg<sup>2+</sup>, Ca<sup>2+</sup>, Cl<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, CO<sub>3</sub><sup>2-</sup>, HCO<sub>3</sub><sup>-</sup>) were studied in the Velika Rusanda soda pan during two years (late spring 2017 and 2018). These analyses are part of the preliminary study of diatom communities in soda pans in Serbia. The analysis of ionic composition confirmed previous finding that water of Velika Rusanda belongs to Na-HCO<sub>3</sub>-SO<sub>4</sub>-Cl chemical type. In 2017, a total of 15 taxa were identified, 5 in plankton and 14 in epiphytic community. In plankton the most abundant were *Craticula halophila* (36.25%) and *Anomoeoneis sphaerophora* (27.25%), while among epiphytic dominates *Surirella brebissonii* var. *kuetzingii* (46.25%). In 2018, a total of 22 taxa were identified, 3 in plankton, 19 in epiphytic community, and 14 on artificial substrate (brick). In plankton we recorded only a few individuals. The most dominant taxon in epiphytic community was *Nitzschia supralitorea* (95%), which also prevailed on brick (66.98%). The only genus recorded in 2017 was *Rhopalodia*, while genera presented only in 2018 were: *Cocconeis*, *Halamphora*, *Hantzschia*, *Humidophila* and *Planorhynchium*. Of the total number of identified taxa three were newly recorded for Serbian diatom flora: *Hantzschia weyprechtii* Grunow, *Navicymbulla pusilla* (Grunow) Krammer and *Nitzschia thermaloides* Hustedt. The most of identified taxa are characteristic for marine or brackish waters, as well as different types of freshwaters with elevated to highly elevated electrolyte content. The results of this preliminary study will help better understanding of diatom communities in soda pans and their assessment for conservation and restoration measures in these ecosystems.

**KEYWORDS:** shallow alkaline ponds, *Hantzschia weyprechtii*, *Navicymbulla pusilla*, *Nitzschia thermaloides*