Botanica SERBICA Vol. 42 (supplement 1) 7BBC Book of abstracts

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

ous authors. In accordance with various resources including relevant volume of the Turkish Flora it is reported by different authors that 14 or 17 taxa exist in Turkey. The conflict between the numbers of the existing taxa is due to the phenotypic variation. *Arum* species have been familiar to East Mediterranean people since antiquity and were used mainly as medicine and food. These taxa are still used by the traditional healers for the same purposes. However, due to significant amount of calcium oxalate crystals, oxalic acid, and oxalates as well as volatile and/or unstable irritating components *Arum* is considered as poisonous. The objective of the study is to discuss information on utilization of these plants from the ethnobotanical point of view. Major part of the ethnobotanical information comprising the vernacular names and way of uses was collected from the local people who know about these plants. The evidence for all kinds of uses for *Arum* taxa in Turkey from antiquity to current traditional medicine has also been summarized. The assessment of the compiled information directs the researchers to make more detailed studies on this complex group of plants including endemic species thereof so as to reveal the ethnobotanical value of Arums in Turkey.

KEYWORDS: *Arum*, Turkey, ethnobotany

Oral presentation 04 09 07

DECORATIVE INDIGENOUS PLANTS ON ZAGREB FARMERS' MARKETS (CENTRAL CROATIA)

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The history of Zagreb farmers' markets began even before the establishment of the City itself, as early as 13th century, when the first public market was established in the area. The beginning of the today's market system was in 1930, when the central market Dolac was opened for public. After that time and especially after the World War II, the market system enlarged and spread following the spread of the City, and nowadays includes 22 locations. Apart from food and local domestic products, the sellers sometimes offer decorative flowers, out of which some are not cultivated but collected in natural habitats. Our aim was to prepare the overview of the decorative indigenous plants sold on Zagreb farmers' markets. We have studied all 22 locations in the period January-April 2018, by visiting the markets and surveying the sellers. We made several visits to the markets offering flowers, to include the whole spring season, while the data were collected using previously prepared, original questionnaires. Decorative indigenous plants were found on 13 locations. Total number of respondents was 50, mostly women of the average age 53. Total number of recorded plant taxa was 79, out of which 39 herbs, 15 trees, 14 shrubs, eight mosses and three vines. The respondents provided 64 different common names for a total of 45 plant taxa, mostly giving one name per species, but sometimes also several names per species or the same name for several species. Altogether 93 % of plants were sold as cuttings, while 7 % plants were provided in whole. Only six plant species were provided with underground parts, for further planting. We found two legally strictly protected taxa, *Taxus baccata* L. and *Helleborus niger* L. subsp. *macranthus* (Freyn) Schiffner, both listed in the Red Book as vulnerable (VU). In general, our conversations with the respondents revealed that they are rather familiar and in agreement with the legal protection of the spring flora.

KEYWORDS: ethnobotany, spring flowers, local markets, ornamental plants

Oral presentation 05 09 15

BARTIN'S NATIVE GEOPHYTES AND THEIR ECONOMIC IMPORTANCE

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The native geophyte taxa of Bartin, one of Turkey's rich flora areas were identified in this study. Bartin province located in the Western Black Sea Region of Turkey is between the eastern longitudes of 32^0– 33^0 and the northern latitudes of 41^0–42^0. It is surrounded by Kastamonu in the east, Zonguldak in the west, Karabük in the southeast and Black Sea in the north. Altitude varies from sea-level to 1619 m. asl. in Bartin. According to Davis squaring system, the research area is within A4 square in the map of Turkey. It is observed mainly Euro-Siberian and partially Mediterranean flora characteristics in the research area. However, there are also some species of Iran-Turan flora region in the south of the area. Variability in topographic structure and soil properties, Oceanic bio-climate, the existence of sand dunes in sea coast, the presence of karstic fields in Kure Mountain National Park, deep valleys between mountain ranges, and riparian lands in Bartin have all a positive impact on its plant biodiversity. Site studies were carried out to collect plant samples in vegetation periods between 2011 and 2017. As a result, based on the taxonomic identification of 1800 plant samples, we determined 109 geophyte taxa belonging to the 57 genera and 26 different families, and 7 of them are endemic for Turkey. Many geophyte taxa in Bartin have been collected illegally from natural habitats because of their valuable bulbs, tubers, corms or rhizomes. The most common taxa illegally collected and marketed for economic gain are *Gagea bohemica* (Zauschn.) Schult & Schult., *Pancratium maritimum* L., *Crocus ancyrensis* (Herb.) Maw., *Ornithogalum fimbriatum* Willd., *Anacamptis pyramidalis* (L.) Rich., *Orchis mascula* (L.) L., *Equisetum arvense* L., *Leucojum aestivum* L., *Lilium martagon* L., *Ruscus aculeatus* L., *Ruscus hypoglossum* L., *Asparagus aphyllus* subsp. *orientalis* (Baker) P.H.Davis, *Iris suaveolens* Boiss. & Reut. Uncontrolled and intensive plant gathering, uncontrolled grazing, intensive forestry applications and road network studies negatively affect the species diversity of geophytes. In-situ and ex-situ conservation measures should be taken especially for endemic and narrow-spread geophyte taxa under threat.

KEYWORDS: geophyte, flora, bulb, tuber, corm, rhizome

Poster presentation 06 09 13

"VELIKI SRPSKI TRAVNIK " - THE NEGLECTED HERITAGE

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In this paper we present and discuss the origin and scientific significance of two works that are kept in the collection "Zaharija Orfelin's Library" in the Patriarchate Library of the Serbian Orthodox Church in Belgrade. These are the first volume of "Veliki srpski travnik" (Eng. "Great Serbian Herbal") and a newly discovered unidentified work of similar content. The aim of this study is to clarify the authorship of these works and bring them to the attention of the Serbian scientific community. In order to state the authorships precisely, all available literature on the subject has been reviewed. A comparison *de visu* of the copies of selected herbals from the Patriarchate Library in Belgrade, the British Library and the Royal Botanical Gardens at Kew in London, and at the Bavarian State Library in Munich has been conducted. For many years Zaharija Stefanović Orfelin (1726-1785), a Serbian versatile creator, has been credited with the authorship of "Veliki srpski travnik", although it had been established as far back as in 1921 by Mita Kostić that its authorship is manifold. "Veliki srpski travnik" is clearly one of the copies of "Herbarium Blackwellianum", created first as a "Curious Herbal" in 1735 by Elizabeth Blackwell (1707-1758), a British herbalist, and later redrawn by Nikolaus Friedrich Eisenberger (1707-1771), a German painter. Zaharija Orfelin bought a copy of the herbal and recreated it as a 3-volume work. For the first volume he assigned Serbian names for the plants to each of the 490 illustrated plates, and described the attributes and usage for 7 plants. Identification of a newly discovered work from the Patriarchate Library in Belgrade has not yet been confirmed for certain, as an ink analysis is needed to determine the time range of creation. However, the plates, the illustrations and the handwriting of Serbian plant names imply that most probably it is one of the two lost volumes of "Veliki srpski travnik". Even if he is not the author of herbal's concept and illustrations, Orfelin's contribution in terms of botanical nomenclature was a significant milestone for the foundations of Serbian botany.

KEYWORDS: history of botany, herbal, Zaharija Orfelin, Elizabeth Blackwell

Poster presentation 07 09 12

NOTES ON ARCHAEOBOTANY, ETYMOLOGY AND LEXICOLOGY OF THE GENUS *CAMELINA* CRANTZ

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The genus *Camelina* Crantz, colloquially referred to as *false flax*, belongs to the family *Brassicaceae* Burnett (syn. *Cruciferae* Juss.) and comprises several herbaceous species originating in Near East, Asia Minor and South Europe. *C. sativa* (L.) Crantz, usually referred to as *camelina*, *false flax* and *gold-of-pleasure*, is one of the most ancient oil crops. The archaeological evidence of its presence in diverse ancient cultures and local agricultures is rich and enables tracing its spread throughout various ages and across the Old World. It is most likely that camelina followed common flax (*Linum usitatissimum* L.) during its spatial and temporal distribution, possibly adapting its growing habit to that of the latter and surviving as its weed-like companion. This may be confirmed by the etymology of the Greek word denoting camelina, consisting of *χώμα* (*ground*) and *λινάριον* (*flax*), depicting a lower competing ability of camelina when growing together with the flax crop. The material testimony of camelina ranges from Neolithic (eight millennia ago) to Roman and Medieval times and from Karakorum in Mongolia, over Armenia and Baltic coastline to the Iberian Peninsula. The common names denoting camelina in numerous ethnolinguistic families distinct the dark yellow or rusty colour of its flowers and seeds. This may be seen in modern languages, such as the Indo-European, with the German *leindotter*, the Italian *dorella*, the Russian *ryzhik* or the Sorbian *žołtk*, and the Uralic languages, with the Finnish *ruistankio* and the Hungarian *sárgarepce*. Some others, such as the Celtic Welsh, with *cydlin*, consider camelina a plant that is literally *with flax*. A vast majority of the Slavic languages regard camelina as something similar to flax and thus have their common names derived from those designating flax, such as the the Polish *lnicznik/len*, the Serbian *lanik/lan* or the Slovak *ľaničník/ľan*. The vernacular names for camelina may be associated with oil, as seen in the Swedish *ol-*

jedådra, or with other crops grown for the same purpose, such as in French, with *sésame d'Allemagne*. Merging archaeobotany and linguistics may cast more light not only on the present, but also on the earliest past of crops, including camelina.

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KEYWORDS: archaeobotany, *Camelina sativa*, crop history, false flax, linguistics, oil crops

Poster presentation 08 09 05

ETHNOGRAPHIC HISTORICAL SOURCES AS A PRELUDE TO ETHNOBOTANICAL RESEARCH IN PODHALE REGION

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Podhale is a cultural region in southern Poland, in the northern foothills of Tatra Mountains. It is a region of ethnographical and geographical uniformity, which for decades has not undergone the process of urbanization, while maintaining numerous customs and characteristics of traditional culture. Ethnographic research in this region has been conducted since the beginning of the 19th century. The main topics that interested researchers of the 19th and 20th centuries were shepherd's customs, architecture, clothing and dialects. Unfortunately, ethnobotanical studies have not been conducted in Podhale until today. This paper is an ethnobotanical analysis of historical sources on the ways of using wild plants by the inhabitants of Podhale. Here, over 25 ethnographic publications and 71 ethnographic interviews from the collections of the Tatra Museum of Natural Sciences in Zakopane, as well as archival interviews from the Polish Ethnographic Atlas and old manuscripts / guides, so-called "jottings" (a kind of guidelines leading to treasures hidden in Tatra Mountains and magical rituals allowing to find them), have been used. In addition, letters to Józef Rostafiński (from 1883) have been analyzed. He conducted a nationwide ethnobotanical survey, as a response to which, J. Rostafiński received almost 860 letters from about 370 respondents, and only two of them came from the Podhale region. The result of this analysis is a list of 177 plant species belonging to 62 families, which were used in the kitchen (mainly as food in hunger times), folk medicine, local architecture and furniture, as well as in magical rituals and religious ceremonies. These analyzes of historical ethnographic sources show that Polish highlanders have been using many of the plants growing in their immediate surroundings. Therefore, they will serve as an introduction to further ethnobotanical research that will be carried out in the near future in Podhale. The final list of species will be the basis for comparing the knowledge about the use of wild plants by Polish highlanders in the past and nowadays.

KEYWORDS: Podhale, ethnobotany, Polish highlanders, use of wild plants, Tatra Mountains

Poster presentation 09 09 08

PLANTS AND SENSE OF IDENTITY – CULTURAL ECOSYSTEM SERVICES IN GOTSE DELCHEV MUNICIPALITY, BULGARIA

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Plants and vegetation are in unbreakable relation with all human activities. Because of these links numerous species and habitats were adopted as cultural symbols by the local communities. This survey is an attempt to describe the variety of plants and plant communities which are part of the sense of geographical, ethnic and religious identity of the population of Breznitsa and Banichan - villages in Gotse Delchev municipality in South West Bulgaria. Ethnobotanical methods such as semistructured individual interviews and focus groups were used to gather the information from the members of the local communities. An interpretation of the data was made considering the concept of the cultural ecosystem services which shows the importance of the agroecosystems, forest and grass ecosystems and the lands with sparse vegetation on defining the self-perception of the members of the rural communities.

KEYWORDS: cultural ecosystem services, sense of identity, ethnobotany, Breznitsa, Banichan, Bulgaria

Poster presentation 10 09 04

TRADITIONAL USE OF MEDICINAL AND EDIBLE PLANTS ON STARA PLANINA (SOUTHEASTERN SERBIA)

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This study provides significant ethnobotanical information on medicinal plant use in the Stara planina region (south-eastern Serbia). The research area is characterized by a high diversity of plant species, which have a wide range of medicinal and dietary uses among the local population. The aim of this study was to document all the traditional knowledge and analyze the medicinal plants used in this area, as well as to identify plant species of importance for future pharmacological studies. Local knowledge was obtained through semi-structured and open interviews, in which 51 informants, aged between 49 and 92 (with a mean age of 70.5), were interviewed. The relative importance of the plant species was determined by calculating the use value (UV). The informants provided data on 157 medicinal and edible plants belonging to 57 families, of which *Asteraceae, Lamiaceae* and *Rosaceae* predominated in their local use. The species with the highest use values in ethnomedicine and diet were *Allium ursinum, Achillea millefolium, Carlina acaulis, Cornus mas, Corylus avellana, Fragaria vesca, Gentiana asclepiadea, G. cruciata, G. lutea, Hypericum perforatum, Juglans regia, Mentha × piperita, Plantago lanceolata, P. major, Rosa canina, Rubus fruticosus, R. idaeus, Sambucus nigra, Satureja montana, Thymus serpyllum, Vaccinium myrtillus* and*V. vitis-idaea.* Medicinal plants were used most commonly to treat respiratory, gastrointestinal, urogenital, skin and cardiovascular conditions, as well as for detoxification and strengthening the body. Aerial parts of medicinal plants (mostly when in bloom) are traditionally used in making various preparations (teas, decoctions, tinctures, oils, ointments, balms, juices, syrups, and 'travarica' brandy). Ethnobotanical research in the Stara Planina region has established that the fruits, leaves, aerial parts or roots of the 47 plant species are used as food and drink in the form of juices, syrups, sweets, brandy, spices, salads (in their fresh state) and for making various other dishes. Ethnobotanical knowledge in this area is decreasing due to high emigration rates in recent times. However, this historically developed ethnobotanical heritage should be preserved and promoted on a wider level and given special consideration in future management plans for the Stara planina region.

KEYWORDS: ethnobotany, Stara planina (Serbia), medicinal plants, edible plants, traditional plant uses

Poster presentation 11 09 14

ETHNOBOTANIC STUDY OF SOUTHERN ŠAJKAŠKA

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Sajkaska is a region in province of Vojvodina, northern Serbia. Region is located in humid continental climate zone. This is flat land transected with big rivers. Because of that, this region is very suitable for agriculture. This paper presents a research in southern part of Sajkaska, region located in Novi Sad and Titel municipalities and 9 settlements: Kac, Budisava, Kovilj, Sajkas, Mosorin, Vilovo, Lok, Gardinovci and Titel. The aim of this paper is to assume diversity of economically important flora of Southern Sajkaska region. This analysis is conducted by collecting data from local population. In every settlement 30 people was polled and they were answering questions about fruit, vegetable, grain, spice and medicinal plant species which they grow, as well as plant species that were grown in the past and also those that are planned to be grown in the future. Collected data were analyzed with classical statistical methods. Results prove correlation between number of different plant species and microclimatic characteristics of settlements, cultural differences between ethnicity of polled people, education levels, type of jobs of people and their age. There are certain trends in types of plants that are grown in different settlements. Also, there are strong correlation between diversity of grown species and resident's age. Considering education levels there are trends indicating higher diversity of grown vegetable, spice and medicinal plant species and species planned for growing in the future. Analysis of resident's ethnicity, indicate higher plant diversity in settlements with more different nationalities living together. This research presents trends in selecting and growing different plant species. It shows trends and correlations about geography and ecology of region and their influence in forming specific groups of species region. Researches like this have great importance in estimation of economically important flora of the settlements and also ethnological and ethno-botanical importance. Also, they compile informations about rare and forgotten species and cultures of researched area.

KEYWORDS: cultivated plants, economical importance of plants, Šajkaška

Poster presentation 12 09 03

USING ELLENBERG-PIGNATTI VALUES TO ESTIMATE HABITAT PREFERENCES OF WILD FOOD AND MEDICINAL PLANTS: AN EXAMPLE FROM NORTHEASTERN ISTRIA (CROATIA)

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The paper presents the first ethnobotanical application of Ellenberg indicator values, which are widely used in European plant ecology. The aim of the study was to find out if Ellenberg values (indicating habitat preferences) differ for wild food and medicinal plants used in north-eastern Istria (Croatia). We used Ellenberg-Pignatti values (the version of Ellenberg values used in this part of Europe). Fifty semi-structured interviews were carried out among local key informants, asking which wild food and medicinal plants they used. The mean number of food and medicinal plants mentioned per interview was 30. Altogether, 121 species were recorded as food