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## Josif Pančić and the new Flora of Serbia

### Abstract

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The importance of Josif Pančić, born in 1814, in the development of Botany in Serbia and the floristic knowledge of this country, particularly by the publication of the *Flora Kneževine Srbije* (Flora of the Principality of Serbia, 1874) and its *Supplement* (1884) and the *Flora of Belgrade Area*, is stressed, as well as the role played by M. Josifović, N. Diklić, N. Nikolić and the new generation of Serbian botanists, particularly V. Stevanović. O. Vasić and M. Niketić in the preparation and publication of the new Flora of Serbia.

*Key words:* Flora Kneževine Srbije, Flora SR Srbije, Flora Srbije, History of Botany.

### Introduction

The reason why I was decided to talk about Pančić, the father of Serbian botany, and Flora of Serbia, is because the XIV OPTIMA Meeting is in the year between the appearance of new second volume of Flora last year, and 200 anniversary of Pančić's birth next year.

### Josif Pančić and the flora of Serbia

It is interesting that the greatest Serbian botanist in fact came into Serbia, because Pančić was not born in Serbia and he never put his foot there until his thirty second year of life. But when he came in 1846, he stayed forever.

Pančić was born in the hilly-mountainous Lika, in present-day Croatia but then part of Austrian Empire. His family, however, came from Herzegovina, another mountainous part of Balkans, where people are known for their shapely figure and smart mind.

Pančić did not have an imposing figure but he was particularly intelligent and smart, combined with an inner strength and determination. He easily endured the great physical effort necessary for field research of that time. In Serbia of Pančić's time there were almost no roads, and great distances were covered by foot. The main vehicle was ox-driven cart, while a horse would be a real luxury. Motels and hotels would be science fiction, and if

Pančić and his travel associates could not find accommodation in a village house, they often slept under the clear, or overcast, sky.

In spite of all this, Pančić managed to travel throughout Serbia in less than 30 years, collecting and processing the enormous amount of material, and then publishing it in 1874 as *Flora of the Principality of Serbia*. During the next 10 years he also prepared the Supplement, which was published in 1884. His other title, *Flora u okolini Beogradskoj* (Flora of Belgrade area), was re-published 6 times in 27 years, and there were numerous other papers as well.

In his very first paper from 1856 he published a list of 1806 autochthonous flowering plants, including 5 new for science. In period from 1862 to 1870, together with Roberto de Visiani, he published a well-known three-tome work: *Plantae Serbicae Rariores aut Novae*, including 30 species from Serbia that were previously unknown to Science.

From the aspect of European botany, his most significant discovery was probably that of a previously unknown woody species, *Picea omorika*, causing disbelief and skepticism in European botanists. It was believed that the European dendroflora was so well-studied that it was impossible for an unknown tree to hide in some secluded corner. In the meantime, *omorika*, the endemic and Tertiary relict, slender and graceful, ruled the wilderness of mountain Tara for millions of years, waiting for Pančić.

Before Pančić, there were only about 200 species known for Serbia, recorded along the route to Greece and Turkey by the Hungarian naturalist Frivaldszky, Austrian geologist Ami Boué and German botanist and phytogeographer Grisebach.

In his two most important works, *Flora of the Principality of Serbia (Flora Kneževine Srbije)* and Supplement, Pančić presented 2422 autochthonous species, which is about 68% of the total number of species presently known for flora of Serbia. This number has additional importance if we consider that Serbia of Pančić's time covered only about one third of its present-day territory.

Even more important than the number of species is that he has proven that flora of Serbia was rich in species, taxonomically diverse and complex from phytogeographic and evolutionary standpoints, deserving full attention and further research.

Although his pioneer work, it also marked the golden age of botany in Serbia. Pančić was the first, and for a long time the only person to study the flora of Serbia in a studious, all-including manner. With his death in 1888, this prominent progress in botany suddenly ended.

During the early 20<sup>th</sup> century, the botany somewhat revived due to effort by Lujó Adamović and Nedeljko Košanin, but Adamović mostly worked on vegetation of Balkan Peninsula while Košanin had wide fields of interest and also studied ferns, mosses and algae.

However, although the intensity of research was much weaker than in Pančić's time, the knowledge on plant life of Serbia has gradually increased through time, as shown by numerous floristic papers and monographs on genera such as *Thymus*, *Euonymus*, *Trapa*, *Fagus*, *Vicia*, and to a certain extent also *Quercus*, *Salix* and *Populus*.

## The new Flora of Serbia

However, for almost a whole century the complex picture on composition, structure and diversity of flora was based on two Pančić's books, as the first tome of new modern Flora of Socialist Republic of Serbia (*Flora SR Srbije*) appeared only in 1970, that means 96 years after publishing of Flora of the Principality of Serbia.

Just 4 years earlier, in 1966, a Board for Research on Flora of Serbia was established at the Serbian Academy of Sciences and Arts. For many years it was successfully guided by another extraordinary man and prominent scientist. It was the Academy Member Mladen Josifović, initiator and organizer of activities on preparing the edition Flora of SR Serbia, and editor of 9 tomes. It is interesting to note that he was not a fundamental botanist but a phyto-pathologist, but he understood not only the scientific but also national and civilization importance of this kind of work.

Activities on the new Flora were very fast and intensive, and 8 basic tomes with 4208 pages were published in just 6 years: the 1<sup>st</sup> and the 2<sup>nd</sup> in 1970, the 3<sup>rd</sup> and the 4<sup>th</sup> in 1972, and four additional tomes in the next four years.

The knowledge collected by Pančić has greatly contributed to this process, not only through already known significant number of species, but also for indicating the direction in which new or additional taxonomic, chorological and phytogeographical studies should advance. This sudden development of floristics soon led to two tomes of supplements – the 9<sup>th</sup> tome in 1977 and the 10<sup>th</sup> tome in 1986.

The ten-tome Flora of SR Serbia includes 7799 autochthonous taxa of vascular flora of Serbia: 3428 species and subspecies and 4371 varieties and forms. The analysis and form of data presentation were matching the most recent classification, taxonomic and phytogeographic principles and understandings of that time, as well as the methods for preparing national floras.

The preparation of 8 main taxa and the first supplement was carried out by 20 Serbian botanists, but the central person and “soul” of Flora was undoubtedly Nikola Diklić, who processed about 22% of taxa by himself, while his excellent knowledge of Serbian flora and great experience in applying taxonomic and nomenclature principles have also greatly contributed to quality of the whole edition as he revised the texts by other authors.

Just like Pančić, Nikola Diklić lacked big stature but was blessed by inner strength that pushes each researcher to go further and higher and never pay too much attention to obstacles and low-comfort conditions.

In the activities on the second Supplement, published in 1986, 12 young botanists from new generation participated mostly through data presented in their papers. Although it was not formally noted, Nikola Diklić critically processed most of these data and prepared them for press by himself.

Appearance of this edition gave a new push to studies of flora of Serbia, especially regarding the knowledge on overall biodiversity, as well as a source of arguments necessary for nature protection. Therefore, after just about twenty years since the first tome of Flora of SR Serbia was published, the Serbian botanists gathered together to work of the second edition, now titled Flora of Serbia.

Unfortunately, this time the activities marched with snail's pace, as after the first tome published in 1992 the second tome was awaited for full 20 years. The reason is not in lack

of knowledge, will and strive in botanists, but in the “higher force” of unsuitable scientific and social politics and almost complete lack of understanding for importance, value and valorization of this type of work.

However, the botanists have done their part of work in the best way. The new supplemented edition was based on the newest taxonomic trends, the knowledge on plant ranges was significantly increased with data gathered through field research, revision of literature data and herbarium collections, while errors recognized in the first edition were corrected. The novelty in the second tome includes distribution maps for about 58% of species.

Besides the “Old Guard” heralded by Nikola Diklić, the first tome was also prepared by the next generation: Vladimir Stevanović and Olja Vasić, as well as the youngest, Marjan Niketić.

The second tome, however, brings an interesting situation regarding the authors. The first version of the manuscript was already written in 1994, and 5 authors of the first edition were included. When more than 10 years later the activities on this tome were renewed, the manuscript had to be altered to a great extent in order to match modern standards, but some of these five authors have either passed away or retired. Therefore most of the original manuscript was reviewed and added to by their descendants who became later co-authors. However, completely new texts were made for certain families and genera, for example families *Papaveraceae* and *Fumariaceae* and genus *Cerastium*. The Natural History Museum plays an important role in both editions of this work, as it hosts the General Herbarium of Balkan Peninsula which is an obligatory database on flora of Serbia, as well as due to the three generations of curators: Nikola Diklić and Vojislav Nikolić, followed by Olja Vasić and the youngest, Marjan Niketić, who are the authors of most chapters. In the second tome of new edition, published last year, Niketić and Vasić have written close to one half of total text, either on their own or as co-authors.

### **The personality of Josif Pančić**

The spring of next year marks 200 years since the birth of Josif Pančić and 168 years since his arrival to Serbia, where he dedicated over 40 years of his life to studying flora.

Perhaps it was the fact that he lived in a small, low stone house with not much light and fresh air that caused Pančić’s very early orientation toward nature. The wish to learn about it as much as possible has led him from Gospić (where another great name of world science, Nikola Tesla, was also born in mid 19<sup>th</sup> century), through Rijeka and Zagreb to Pest, where he had his graduate and doctoral studies at the Faculty of Medicine.

Later on he would recall on his delight in lectures presented by botany professor József Sadler: “*And since the first course in botany I started to love botany and decided to become a botanist, so I started to botanize excitedly and to collect plants around Pest and Buda, ...*”.

This decision took him further, to Vienna, where he studied his material at the Natural History Museum. In Vienna he met Vuk Karadžić, reformer of Serbian language and collector of folk poetry and prose, who suggested that he should go to Serbia, which needed many medical experts, and study plants there.

For the first 7 years Pančić worked as a physician but he also collected and studied plants, until in 1853 he became a professor of natural sciences at the Lyceum, which grew into the Great School, the precursor of Belgrade University.

Now that was the place where all Pančić's knowledge, the wide range of abilities and high qualities were finally shown in their entirety, as well as all the good and fine characteristics of his personality, character and mentality.

Very intelligent and well-educated, Pančić was able to observe the phenomena analytically, both in nature and in society, and to find interconnections and causations. He was untiring in scientific work as well as in other activities that he considered important for Serbia, where he tried to apply his experiences from his numerous journeys into other lands.

Although he was the most important Serbian botanist and one of the greatest Serbian scientists, Pančić is much more than that and his importance is much wider.

As a medical doctor who also spoke several languages, such as: German, Latin, Italian, French, English, Spanish, he was one of the most schooled and most educated persons in Serbia of that time.

- He is the one who established the natural science in Serbia, as he was the first to:
- study all the natural assets and notice the interconnections and interdependence of natural phenomena,
  - teach natural sciences as a professor to the next generation of renowned Serbian scholars of nature,
  - write textbooks for natural sciences,
  - translate to Serbian language numerous foreign textbooks, giving them a personal touch by adding the new data he discovered during his research,
  - create the expert terminology in Serbian language for plant and animal organs and geological phenomena, by using words from the vernacular language,
  - write on need of careful use of natural assets,
  - write the first systematized papers on fauna of Serbia that were also printed in Serbia,
  - open a Natural History Cabinet at the Great School, and these collections were later used as initial funds for several referent collections at the Natural History Museum,
  - established the first Botanical Garden.

He was a well-known and respected public personality:

- the first President of Serbian Royal Academy (today the Serbian Academy of Sciences and Arts), established at 1887,
- six times the Dean of Great School,
- the first Head of Botanical Garden,
- vice-president of National Parliament, state advisor, member of Parliament,
- strived to improve the school system, to extend the scope of education and culture, and to accept modern achievements,
- he fought for piece and brotherhood among the Slavic peoples, and as a medical doctor he had participated in all independence wars taken by Princedom of Serbia at the time.

Knowing all this, we will see that throughout his life Pančić remained faithful to his belief: *“The man with the knowledge will have many opportunities to help other people, but ignorance is always harmful to the whole society”*.

His wish to be buried at his favorite Kopaonik, in a casket made of *omorika* wood, was fulfilled only 63 years after his death, when at the highest peak of this mountain, called Pančić’s Peak, a mausoleum was built with an inscription: Honoring Pančić’s request, we moved him here to rest forever. We also announce his message for the Serbian youth: *“Only with a thorough understanding and analysis of the nature of our country will they show how much they love and honour their homeland”*.

However, the greatest and most beautiful monuments to Pančić are the plants he has discovered or that are bearing his name.

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