

Ampelographic (grapevine) collection in the 230-year-old Herbarium Wolnyanum (Sremski Karlovci, Serbia)

Milica Rat

The herbarium collections in Southeast Europe were mostly founded in the 19th century or later. However, the oldest collection in Serbia dates back to the 18th century. It was founded in the Habsburg Monarchy as a school herbarium in the first Serbian gymnasium in Sremski Karlovci, where it is still kept today. The founder was Andreas Wolny (1759–1827), first professor of geology, mineralogy, botany and zoology (and various other subjects), and soon after professor and director of the gymnasium. He worked and lived in Sremski Karlovci in the period from 1793 to 1816. Wolny was a respected botanist and mineralogist at this time and had been a member of the Regensburg Botanical Society since 1801, and a member of the Society of Mineralogists in Jena since 1805. He was an esteemed teacher, known for his systematic approach. He collected plants in the surroundings of Sremski Karlovci and the mountain Fruška Gora and described them with data that proved their practical value. The herbarium served as a handbook for various subjects, with a focus on plant systematics, pharmacy and agriculture. In modern times, this collection is valued as an important museum treasure that has little or no floristic value, as the place and date are not indicated on most labels. The inventory part of the collection comprises nearly 7000 herbarium sheets. The exsiccates are organised into sub-collections: Algae, Fungi, Lichens, Bryophyta, Pteridophyta, Monocotyledons and Dicotyledons. Also subdivided as sub-collections are material collected by: Andreas Wolny, Josip Pančić (1814–1888), and material obtained by exchange or sent by foreign botanists (Josephine Kablick (1787–1863), Jacob Juratska (1821–1878) and Rat (2023).

Since the end of the 19th century, the collection has been closed and no new plant material has been added. Due to its historical and cultural significance and especially its importance as a natural document, it has been legally protected as a cultural monument by the Republic of Serbia since 1950. In 2017, modern research began on this forgotten and neglected collection, now recognized as Herbarium Wolnyanum (Rat 2023). The first goal was to re-inventory the herbarium sheets, review the material and prepare it for further study. As the process of revision began, many interesting discoveries were made. Among them was the discovery of an ampelographic collection of grape varieties grown on Fruška Gora Mountain at the beginning of the 19th century, before the phylloxera plague in Europe. The

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Address of the author

University of Novi Sad, Faculty of Sciences, Department of Biology and Ecology, Trg Dositeja Obradovića 3
21000 Novi Sad / Serbia

Contact

milica.rat@dbe.uns.ac.rs

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Fig. 1. Herbarium sheet of grapevine cultivar 'Mala Zelena Smederevka', Herbarium Wolnyanum (Sremski Karlovci, Serbia), collected by „Issan Popovics, im Doboschevaz” (= Ivan Popovic, Doboševac, Sremski Karlovci, Serbia)

oldest known ampelographic herbarium collection in the world is kept in Spain (Gago et al. 2019). It was established in 1803–1804, almost 20 years before the *Vitis* collection in Sremski Karlovci. All other known *Vitis* collections in the region date back to the beginning of the 20th century, a time when phylloxera was already present in Europe and contributed significantly to the disappearance of old autochthonous varieties (Ollat et al. 2016). Given these circumstances, the importance of these two collections is exceptional.

The first results of the revision of the Herbarium Wolnyanum have shown that 122 herbarium sheets of different *Vitis* varieties are kept in the collection. Of these, 75 have so far been preserved with pressed material. Each of these sheets contains at least one leaf, a pressed grape and one or more herbarium labels (Fig.1). The list of grape varieties includes old, autochthonous grape varieties that have been cultivated in the region for centuries, many of which are no longer known today. The specimens are divided into the „white grape” group and the „red grape” group. Based on the information on the labels, 55 *Vitis* varieties are preserved on sheets, some of which come from several different vineyards. All the material was collected in the surroundings of Sremski Karlovci, in the Fruška Gora mountains. However, the subsequent changes in the names of the settlements (due to geopolitical changes) as well as the labels written in several old languages (Old Serbian, Old German as well as Spanish, Hungarian, Latin and French) require a detailed analysis of the material to confirm the locations and other details listed on the labels.

The first scientific result provided the list of grape varieties, while further research, including molecular analysis of aDNA, will contribute significantly to the identification, confirmation, and knowledge of the development of viticulture in Serbia, but also in the Balkan Peninsula and the Pannonian Plain.

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Autor(en)/Author(s): Rat Milica

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