

Homage to the oaks of Slavonia: the last relics of the Central European lowland primeval forests

Klepac, D., 1996: *Hrast lužnjak u Hrvatskoj* [Pedunculate oak in Croatia]. Vinkovci – Zagreb, 1996,

In Central Europe, first of all in Hungary, pedunculate oak of Slavonian origin has been extensively planted since the end of the last century. It has proven its genetic superiority irrespective of site conditions so much, that many Hungarian forest botanists consider this provenance as a separate subspecies. Although the Slavonian populations can be easily discerned based on the exceptionally straight stem, relatively regular crown and upward pointing branches, recent genetic investigations do not justify the separation of this provenance from other populations in Central Europe. It is more probable that the superior quality on Slavonian populations is linked to the fact, that the acorns collected and shipped in vast quantities from Slavonia around the turn of the century originated from yet untouched forests of primeval character, where selective cutting did not have an effect on the genetic makeup of the stands. Moreover, it is unquestionable that the extensive gallery forests and inundation lands of the Drava and Sava rivers offered optimal ecological conditions for the species, maintaining a high level of genetic diversity.

The volume *Hrast lužnjak u Hrvatskoj* [Pedunculate oak in Croatia]. Vinkovci – Zagreb, 1996, edited by academician D. Klepac under the auspices of the Croatian Academy of Sciences, does not consider the Slavonian pedunculate oak a separate taxonomic entity either. This handsome book of 560 pages has been published on occasion of the 120th anniversary of the foundation of the Croatian forestry journal *Šumarski List*. A common undertaking of more than a dozen well-known Croatian scientists, this volume gives a detailed account on the history, ecology, silviculture, yield and utilization of pedunculate oak and may be a valuable source of information for anybody interested in Central European conditions. The section on improvement was compiled by M. Vidaković, I. Trinajstić, Ž. Borzan, A. Krstinić and J. Gračan. The usefulness of the book for a foreign reader is greatly improved by the extensive English summary chapters (about 50 pages) and a very detailed literature list, which concentrates, however, nearly exclusively on Croatian sources.

Although the title of the book refers to Croatia, the pedunculate oak populations described and analyzed are situated in the Northeastern corner of the country, where the parallel running rivers Drava and Sava nurtured the once vast and diverse lowland forests of Slavonia. A territory largely uninhabited until the 18th century, Slavonia was settled by the Austro-Hungarian administration as a buffer zone towards Turkey-occupied Bosnia. The history of the Slavonian oak forests is the history of vanishing of the last primeval forests in the Central European lowlands.

The Croatian-Slavonian Military Frontier District registered in 1746 approximately 741 thousand hectares of oak forests. Although the quality of the "Slavonian oak" was already known since the middle ages, exploitation on a larger, and ever increasing scale started only in the late 18th century.

Timber trade was boosted during the short French reign in Dalmatia (1809–1814), when staves for wine barrels appeared in European trade as "Austrian" or "Hungarian" staves. During the development of the railway network in the second half of the last century, timber of Slavonian origin was used extensively all over the Monarchy and even in Italy and France for sleepers. Locally hewn or sawn large-sized construction timber reached also distant places: for the parliament buildings both in Vienna and Budapest, the Vienna Hofburg and Town Hall etc. Slavonian oak was utilized.

At the time of demilitarization of the Frontier District, in 1871, there were still 75 thousand hectares of untouched oak woods along the Sava and Drava rivers. The development of this region has been financed to a great extent from the revenues of consecutive exploitation of the rest: Croatian roads, railroads, schools, river regulation works and even the founding of the Forestry College in Zagreb benefitted from the total of 94 million gold crown income of the Frontier District Development Fund from timber sales. The fame of the Slavonian timber reached even world exhibitions in Budapest and Paris around the turn of the century. A Slavonian oak stem section displayed in Paris in 1900 had a diameter of 260 cm at breast height and a volume of 64 m³.

The cutting of primeval forests continued even after World War I; out of the pitiful rest of 7,500 hectares of old-growth oakwoods in 1920, only one single stand survived to the present day: the Prašnik reserve, covering 53 ha. The sample plot in the reserve produces still awesome statistics: the trees aged between 150 and 300 years have diameters between 70 and 200 cm, the dominant height reaches 40 m. While individual trees may have volumes up to 50 m³, the standing volume per hectare is 615 m³.

Pedunculate oak forests play still a central role in the Croatian forestry. Naturally or artificially regenerated stands cover approx. 200 thousand hectares with a total standing volume of 415 million m³. The majority of stands is concentrated in the vicinity of Vinkovci (Eastern Slavonia). Therefore the interest in improving pedunculate oak has its justification. There are at present more than 60 registered seed stands with a total area of 2,800 ha. There are 6 seed zones in the Slavonian region. The main problem with seed management is however the extreme periodicity of mast years, due to unfavorable changes in ecological conditions. An extensive seed orchard (18 ha) has been recently set up near Obradovac, where at a fairly wide spacing of 8 × 10 m a crop of 8 kg acorns per tree beginning from age 10 is expected, based on earlier experimental results. Plus tree selection and progeny testing continues in the meantime.

Csaba Mátyás (Sopron, Hungary)