

# Outstanding personalities of soil science in forestry

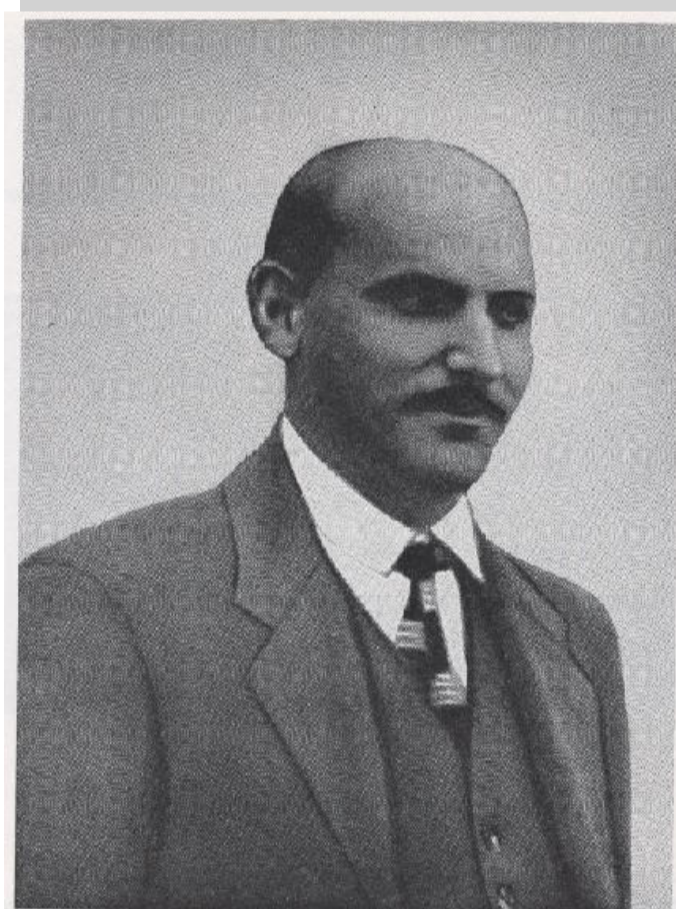
Soil science in forestry was developing in the last centuries partly independently. First steps to create forest education and science in Hungary were made in the 18th century, nearly at the same time in different places (Liptóújvár, Kismarton, Keszthely, Selmecbánya, etc.). Independent higher forest education was started in 1808 in Selmecbánya (Banská Štiavnica), when Heinrich David Wilckens (1763-1832) was appointed as professor and Royal Mining Councillor. In his lecture notes „Forstkunde” (Forest sciences) including five volumes, he had already given a detailed description of the forest site properties, among them about soils. Rudolf Feistmantel (1805-1871) dealt with soil science in his lectures with similar great emphasis. From this time on soil science in forestry started its own development, worth to present here its most important representatives.



**Lajos Fekete (1837–1916)**

An outrageous man of Hungarian higher forestry education and research, who gave great respect to forest soil science. After his studies in Selmecbánya he got his degree in forestry in 1862, in Kolozsvár (Cluj-Napoca). He gave lectures at the Mining and Forestry Academy in Selmecbánya from the year 1867, among others in soil science and climatology.

His duty was the leading of the botanical garden and the silvicultural and research activities of the academical parkland. His book „Forest soil science” was published in Selmecbánya in 1882, in Hungarian language, explaining „soil development”, „description and classification of the most important soil types”. This was the first scientific work presenting a summary of forest site description in Hungarian. He has been acting for decades at first as deputy-director, later as director of the Hungarian Royal Mining and Forestry Academy in Selmecbánya. In 1910 he became a corresponding member of the Hungarian Academy of Sciences. Lajos Fekete was the last famous polymath of forestry.



**István Vági (1888-1960)**

He started his professional career in Selmecbánya after the 1<sup>st</sup> World War, as an assistant of professor Gergely Bencze. In 1923 he was appointed as director of the Department of Chemistry at the Forestry Academy in Sopron. In his research work the cooperation with his famous colleague professor Dániel Fehér, a soil microbiologist and plant physiologist, had a significant role.

He examined the effects of various compounds (e.g. nitrite, sodium carbonate) on plant growth, the salt-affected soils in Hortobágy, as well as biochemical problems of afforestation on alkaline soils.

His most important academical lecture notes were the „Forest Site Evaluation” from 1926 and the „Components of Agricultural Chemistry and Fertilization” from 1927. After 1945 he had been giving lectures in Chile and Santiago for some years.



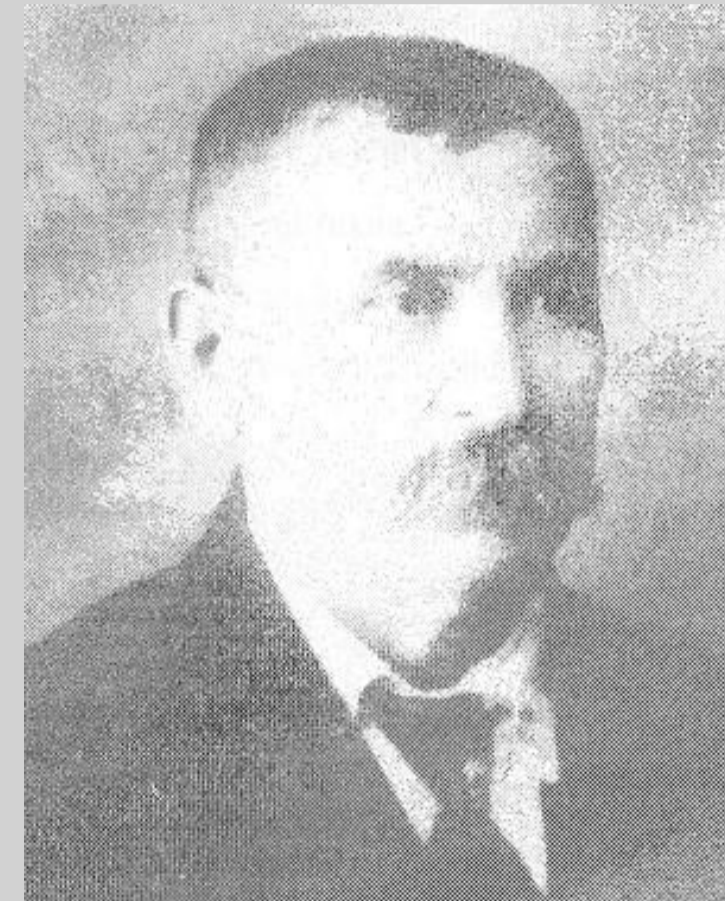
**Dr. hc. Imre Babos (1901-1979)**

He got the doctor title in forestry, and worked as an honorary professor at the Forestry Faculty of the University of Sopron. One of his most important achievements was the elaboration and delineation of forestry regions in Hungary with special emphasis to silvicultural activities including the tree species choice based on forest site evaluation.

He founded the basic principles for the system of forest site types and their mapping, which knowledge he summarized in a practical guide for forest site evaluation. He made proposals for the complex evaluation of forest plant communities and abiotic factors like climate and soil.

His further research covered fields like the investigations on the fluctuation of ground water level in the Great Hungarian Plain, as well as the elaboration of the basic principle of poplar production in Hungary.

Due to his scientific and organizatory activities the percentage forest cover of Hungary increased from 12 to 18 % within 40 years after the 2<sup>nd</sup> World War.



**Gergely Bencze (1854-1925)**

He graduated in forestry in 1879, in Selmecbánya, than he started his professional carrier in the forest directorates of Gödöllő and of Beszterce. In 1882 he was appointed as the director of the Péteri Forest Directorate.

In the same year he successfully applied for employment at the Institute of Forest Chemistry at the Hungarian Royal Mining and Forestry Academy in Selmecbánya. In Munich he attended lectures of Bayler, Jolly and Ebermayer between 1883 and 1885. He was the founder of a complex ecological view in the higher education of soil science, climatology and agricultural chemistry. With the aim of a proper evaluation of black locust, in 1883 he analysed its wood ash in detail, and gave recommendations for its use in the agriculture. He examined the heating-value of various timbers, and made first extended interception measurements in Hungary.

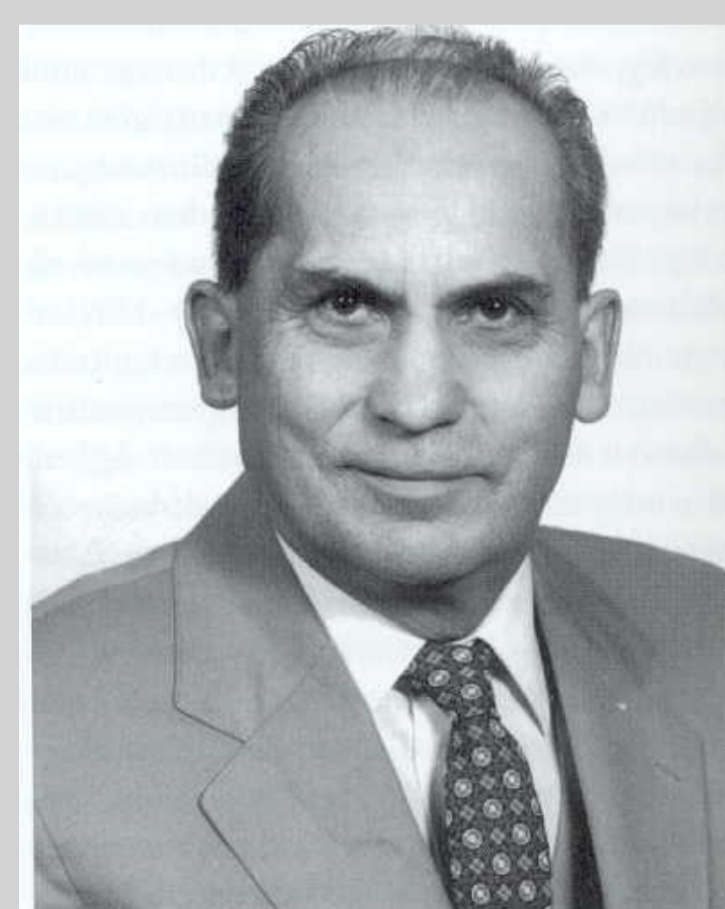


**Károly Botvay (1897-1958)**

He started working on the side of István Vági at the Forestry Academy in Sopron. During a visit to the Forest Research Institute in Munich he did research on soil physics. He recognized, that due to the arid climate of Hungary, hydrology is here the crucial limiting forest site property, controlling growth and primary production of forests.

He developed a new sedimentation balance and examined in detail the capillary fundamentals of sandy soils. His extended research on the demands of black locust for the quality of soil supported the afforestation program in the Hungarian Great Plain significantly.

In his synthetic writing about the variation of soil properties across Hungary in 1943, emphasis was placed on his learnings about soil colloidal properties and soil chemistry, but he described the connections between soil hydrology and plant water uptake too.



**György Pántos (1924 - 1986)**

He was the descendant of Dániel Fehér, leading the Soil-biological Research Laboratory of the Hungarian Academy of Sciences from 1956, than as the director of the Department of Soil Science at the University of Forestry and Wood Sciences in Sopron between 1960 and 1975.

His research focused on rhizosphere bacteria in agricultural soils, but he also examined the soils along artificial watercourses for their afforestation. Under his leadership, his department was active in planning of forest green belts in agricultural areas, in soil mapping, in research on the efficiency of organic and artificial fertilizers in hybrid poplar plantations, as well as in examining the possibilities of agricultural and industrial wastewater treatments and the effects of liquid manure on soil microbes.

*Bridging the Centuries*  
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