

## Karel Kaňák, the founder of the Arboretum Sofronka is octogenerian

Even if it sounds unbelievable, this man, full of energy and bright ideas, celebrated his 80<sup>th</sup> birthday.

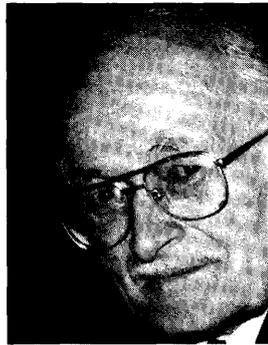
Karel Kaňák was born in Doubravka at Plzeň on September 3, 1922. He studied at the secondary school and after graduation he worked in the building industry. After the World War II he studied forestry at the Czech Polytechnic in Prague. Already during his studies and after his graduation he worked in the Department of Botany with Professor Klika and later in the Department of Dendrology and Geobotany with Professor Svoboda. In 1948 he participated in the expedition to Iceland under the guidance of the polar region explorer Prof. Emil Hadač to study similar ecological conditions which were present in Central Europe at the end of the last glaciation.

Since 1951 Karel Kaňák worked in the Institute of Silviculture, Seed Science and Nurseries in Opočno. Immediately after the reorganization of the Czech Forest and Game Management Research Institute, he came to Jíloviště – Strnady and started to deal with the breeding of Scots pine. In 1956 he started to establish the collection of pine species in Arboretum Sofronka at Bolevec near Pilsen. He started with the N. I. Vavilov's idea that each breeder who starts working with plant species must also investigate their geographic variation. In this way K. Kaňák collected in Arboretum Sofronka a rich collection of pine species and their provenances. The richest collection – *Pinus sylvestris* L. – covers more than 250 populations and only from the territory of the USSR there are more than 120 populations. Further rich collections are of *P. banksiana*, *P. contorta* var. *latifolia* and *P. nigra*. In total there were planted more than 60 species of the *Pinus* genus of which more than 30 species survived in the arboretum.

Such a broad experiment could be carried out owing to rich international collaboration. The collection of pine species in Arboretum Sofronka originated from the seed exchange with numerous foreign institutions and many of the represented populations occur in collections abroad.

Karel Kaňák was also one of the first, even if not the first forester in his country, who understood the significance of biochemical methods for characterization of the intra- and interspecific variability of tree species. Various administrative barriers prevented him from utilizing this collection for this purpose in a larger scale.

He used this collection for the investigation of ecological adaptations of Scots pine and for the definition of the hybridogene origin of the hilly ecotype of Scots pine.



Thanks to his rich theoretical knowledge and practical experience gained from his pine collection he managed to react quickly to the deteriorated ecological situation and forest decline. He proceeded from the range-wide studies of pine species included in the Arboretum. They were based on the parallel variation (VAVILOV 1951) and similar genus characters, defensive systems, migration and species history.

In 1982 he started to work in the Ore Mountains and proposed the natural way of the conversion of the dying-off spruce stands to more tolerant nature-like mixed stands. Evolutionary principles formulated by K. Kaňák as well as prognosis of the ecological changes resulted in resistance among the technocratically oriented foresters. This was one of the reasons why he left the Forest and Game Management Research Institute after 38 years. The Arboretum, however, was further maintained by his son Jan Kaňák.

Karel Kaňák found a new working place in the Research Institute of Ornamental Gardening in Průhonice, where he used his experience with the increased tolerance of some species or populations to environmental stress. Two years later he came to the National Park of Šumava to establish the research laboratory of the forest evolution. He established the first laboratory of the biochemical genetics outside the research institute utilizing monoterpenes and isozymes. Using modern methods he started to evaluate the man's impact on the forest ecosystems within the national park.

He spent his 70<sup>th</sup> birthday in St. Moritz participating in the international symposium Subalpine pine species and their natural environment, where most participants presented proofs of significance of the co-evolution of birds and animals and pine species for the regeneration of this species at the upper tree line zone. When already in Switzerland, he spent some days on hiking excursions in the Engadin Alps and afterwards he went to Calabria to see other extreme sites with the occurrence of *Pinus heldreichii*.

After working for national park of Šumava he continued with biochemical analyses also in the national parks Krkonoše (Giant Mountains) and České Švýcarsko (Czech Switzerland) and he seemed to have found the acceptance also among foresters.

He presented the results of his work also at the age of 75 on the 23<sup>rd</sup> meeting of the Working Party of Forest Genetics and Tree Breeding in Chorin near Berlin and also during the World Forestry Congress in Antalya, Turkey.

Numerous botanists, foresters and many others are discussing the problem of how to preserve gene pool of tree species and mainly who should be responsible for this task. He started in Arboretum Sofronka without rich funds, and press conferences and more than 40 years ago originated the product which has proven that only hard work can solve actual problems of the present and the future. This is also the merit of his 57 year-work.

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