

CELEBRATING THE 100th ANNIVERSARY OF GEORGY F. MOROZOV

Georgy Morozov, a renowned reformer of forestry engineering, founder of a new forest management theory, mentor and role model for several generations of forest management functionaries, was born on 7 (19) January 1867.

Morozov's path toward science was a winding one. To please his father, he first became an artillery officer and, during his three years of military service, Morozov met many representatives of the progressive student community, including revolutionaries, who nurtured his interest in social matters and fostered an urge for higher education. Already at that time, after studying the works of Kliment Timiryazev, Morozov became a committed Darwinian. At the age of 23, he entered the St Petersburg Forestry Institute, where he learnt from prominent professors, including A.F. Rudzkoy, I.P. Borodin, P.A. Kostychev and N.A. Kholodkovsky; he was also closely acquainted with the renowned educator and anatomist P.F. Lesgaft, who made a great impact on the young forestry specialist's future.

After completing the Institute's theoretical course in 1893, Morozov started working at the Khrenovskoye Forest District in the Voronezh Province as the forest warden's assistant and instructor at the forestry school. That is where he demonstrated his talent as a researcher, when he discovered why pine plantations were unsuccessful in the dry pinewoods of the wooded steppe belt. In 1895, Morozov defended his graduation thesis and was granted the rank of research forester; in May 1896, he was offered the chance to go on a business trip abroad to study forestry experimentation activity. This trip was very useful for his further work.

After returning home, Morozov first worked as manager at a sand stabilisation project in the Pavlovsk parish of Voronezh Province and, in 1899, he became the forest warden for the Kamennostepnoye Forest District, which was part of a network of experimental plots established by the expedition by V.V. Dokuchaev. Fully armed with knowledge and practical experience, the young forester started up trial plantations using a well-planned method, taking into consideration the terrain features, soil cultivation techniques, prior agricultural use of the land, presence of natural growth, and the origin of the planting material. He studied the root systems of wood species, their forms, growth and influence on the surrounding communities.

That was when Morozov came up with the idea of creating a new science – the theory of forest management, or forestry. He believed that “the science of plantation ... must be an independent discipline, a future scientific foundation for forestry, in the broadest sense of this word”. Morozov elaborated his theories in the articles entitled ‘Soil science and forestry’ and others, where he showed himself not only to be a scientist and educator, but also as a profound thinker. He was the first one to highlight the need for comprehensive research into the life of the forest.

A recognised scholar and expert in forest management practices, in November 1901, Georgy Morozov was elected Head of the Forestry Department at the Forestry Institute and remained in this office until 1917. Here, he engaged in busy work that resulted in publication of the book *The Science of Forest. Issue 1. Introduction to the Biology of Wood Species* in 1912. Striving to get to know the forest better, to understand the diversity of its forms, the uniqueness of its life, to expose its biological substance and to identify the laws governing its development, Morozov diligently studied the interaction between trees in the forest, their influence on the ecosystem, the concept of plantation, and the role of geography in the life of the forest. Treating the forest as a biocenosis, he gave it a new definition that essentially generalises all the aspects of the life of this natural phenomenon.

In some of his other works, Morozov covered the very important issue of species change and demonstrated the principle that controls this change and the diversity of the factors on which it depends. He also wrote about many other aspects of forest science and forestry, including forest cultivation. Still, the crown of his labour, which created the everlasting reputation of this prominent forester, was certainly the theory of plantation types, which is founded on the concept of forest as a geographical phenomenon.

Classification and typology of plantations was also in the focus of other researchers (D.M. Kravchinsky, D.D. Nazarov, I.I. Gutorovich and N.K. Genko), but they all looked at this issue chiefly from the practical perspective. Commending them on their work, Morozov took it one step further and endeavoured to develop a classification of plantations from a broader theoretical perspective.

In some of his articles, Morozov suggests new ways of looking at the types of plantation, which, in his judgment, depend primarily on the soil conditions under which the forest grows. That is what determines the growth of primary, natural plantation types, and human interference results in new, provisional types arising. Yet this does not mean that a specific type of forest or plantation type, as forest scientists would say at the time, depends exclusively on the soil. At the very beginning of his research work, Morozov attributed the primary role to soil, whereas, later in his career, he clearly stated that “the plantation type ... must be associated with a specific climatic region, then, with the topography and, finally, with the soil and geology conditions”, and that “the classification of forest communities ... must be based on a combination of all the forest-forming drivers”, including the ecological properties of wood species, the geographical environment, the relationship between the forest-forming organisms, historical and geographical drivers, and human interference.

To be fair, Morozov did not produce an effective classification of plantation types but he did point out that they may be combined in larger classification groups, all the way up to entire forestry zones.

This description of Morozov’s creative work would be incomplete without mention of his concern for development of forestry experimentation efforts in Russia. He himself made a significant contribution to this work at the beginning of his career. He did a lot to organise and streamline experimental forest districts; he drew up detailed plans of experimental work; he promoted this idea at numerous meetings and sessions; he even introduced the subject of experimentation into the general forest management curriculum. Morozov also did much to promote science. In the period from 1904 to 1918, he was a permanent editor of the chief contemporary publication writing about forestry issues – the Forestry Magazine. Overall, Georgy Morozov’s short but glorious life was extremely fruitful. He died at the age of 53, on 9 May 1920.

Morozov left behind a copious literary heritage. He published a total of 316 works, filled with ideas and facts that were of high relevance in the era of scientific forestry development. There is not enough room in this magazine article to describe all the products of Morozov’s work and it is hard to praise that work in just a few words. To be brief, we must note that the top-shelf ideas proposed by Morozov laid the groundwork for the development of forest science. His work titled *The Science of Forest* provided the foundation for the graceful and ever-growing institution of scientific forestry concentrated around the theory of biogeocenology that is now being developed by the V.N. Sukachev school of thought. Taking the theory of plantation types as a basis, our forestry scientists have developed universal diagrams of forest typology used as a theoretical foundation for many forest management initiatives. Some other subjects that Morozov worked on have also been developed.

Of course, Georgy Morozov was not right in everything he did, which can be explained by the novelty of this subject matter and the need to engage in extensive dispute with his opponents in the academic community. We have also seen cases of inappropriate assessment of Morozov’s scientific work. Even so, the core does not lie in these mistakes of the past. The core is that Georgy Morozov laid a robust scientific foundation on which generations of his successors have been building modern forest science and forestry practices, allowing us to make successful use of, preserve and multiply our rich forest resources.

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