

# The Wardenburg Family in Estonian Forestry

by

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## Introduction

Leaving aside the more distant political history, we can trace closer ties between Estonia and Denmark, or, more precisely, Danish influence in Estonia, to the second half of the 19<sup>th</sup> century.

This influence is especially apparent in the realm of agricultural improvements. In the Baltic provinces of Russia the Danes introduced improvements in agriculture which were widely promoted and put into practice during the 19<sup>th</sup> century. In addition, in the middle of the century some technical schools of forestry for technicians were opened on the estate of Kurküll/Küti in Viru County and on the estate of Lipskala/Lipškalna belonging to the Livonian Knighthood in Southern Livonia. In step with an increase in improvement projects in the second half of the century there emerged a great demand for specialists in the new methods. These specialists were trained at the Riga Polytechnic and in educational institutions in Germany. Particularly appreciated, however, were the specialists from Denmark. The most distinguished of them was Peder Rosenstand-Wöldike. He graduated from the Copenhagen Polytechnic in 1880 and worked in the Baltic provinces in 1884-1892 and 1897-1909.

In addition to conducting agricultural and sylvicultural improvement projects that sparked great interest he has gone down in history as the technical director of the Improvement Bureau of Livonia and Estonia, that is, he was the actual director and organizer of the work of the organization.<sup>1</sup> Furthermore, several land plantation technicians who came to Estonia from Denmark were his students or partners. The number of them grew to six or seven by the early 1890's.<sup>2</sup> The most famous of them were Jens Christian Johansen (the brother of the well-known military man, land plantation technician and forester of Denmark, Poul Theodor Johansen, and father of Paul Johansen, one of the most prominent historians of Estonia before 1939), Johann Hoppe, Heinrich Wilhelm Precht (father of Johannes Heinz Precht<sup>3</sup>, famous for his

<sup>1</sup> OTTO KARMA: Peder Rosenstand-Wöldike melioratsioonalasest missioonist Eestis [On Peder Rosenstand-Wöldike's land improvement mission in Estonia], in: Teaduse ajaloo lehekülgi Eestis 5 (1985), pp. 185-195.

<sup>2</sup> IDEM: Jooni maaparanduse arengust Eestis kuni 1917. aastani [Features of the development of land improvement in Estonia until 1917], Tallinn 1959, p. 45.

<sup>3</sup> Album Academicum Universitatis Tartuensis. 1918-1944. Vol. 2: Tartu Ülikooli 1919-1929 immatrikuleeritud üliõpilased, matriklinumbriid 1-10191 [Students matriculated at the University of Tartu in 1919-1929, matriculation certificate numbers 1-10191], ed. by LAURI LINDSTRÖM et al., Tartu 1994, p. 557.

works on the history of forestry who studied the subject at the University of Tartu and who worked as a head forester in Germany afterwards), and others. They have left their smaller or greater imprint on the development of Estonian forestry with their plans for forest drainage.

Somewhat surprisingly persons of Danish origin have made a considerable contribution to the development of forestry in Russia and the Baltic provinces. Well-known are the works on silviculture in general and forest surveying in particular written in the mid-19<sup>th</sup> century by Count Alfons Vargas de Bedemar (1816-1902), who was the first in Russia to prepare the yield tables of stands which are partially in use even today. It should be noted that influences from Schleswig-Holstein<sup>4</sup>, which then belonged to Denmark, have been detected in the work of Baron Balthasar von Campenhausen (1745-1800), whose services in the evolution of Estonian forestry as an independent branch of the economy are immense. Near St. Petersburg also worked the Danish land improvement technician and forester, A.F. Kofoed-Hansen.<sup>5</sup>

The Wardenburg family, however, is unknown to the general public, even though they directed the management of state forests on the island of Saaremaa (Ösel) for more than 70 years and worked as head foresters of private forests in the province of Livonia and even in Russia. So far their activity has been treated in just one brief survey.<sup>6</sup> We can supplement that material with several studies on forest history that deal with the management of state forests in the Baltic provinces. In these studies, the achievements in Saaremaa are associated with Wardenburgs, in one way or another. Analyses which cover this so-called Wardenburg period have been made of the management of forests on the Sörve peninsula until the 1860's<sup>7</sup> and of silvicultural works performed on Saaremaa, such as the establishment of plantations, improvement felling, etc.

This survey is an attempt to focus on the Wardenburgs as forestry specialists whose activity had a significant influence on the development of forestry on Saaremaa as a whole from the mid-19<sup>th</sup> century up to the years of World War I.

<sup>4</sup> HUBERTUS NEUSCHÄFFER: *Kleine Wald- und Forstgeschichte des Baltikums. Lettland und Estland. Ein Beispiel europäischer Integration und kultureller Wechselwirkungen*, Bonn 1991, pp. 47-49, 53-54.

<sup>5</sup> C.S. DE ROEPSTORFF: *Meddelelser om danske Forstkandidater 1798-1897* (Særtryk af Tidsskrift for Skovvæsen, vol. VI-IX) [Data about Danish foresters (Separate from Journal of Forestry, vol. VI-IX)], 2. omarbejdede udg. af „Forstlig Stat“ Kjøbenhavn 1898, pp. 15-16.

<sup>6</sup> TOIVO MEIKAR, HELDUR SANDER: *Die Familie Wardenburg als Begründer des Forstwesens in Estland*, in: *Jahrbuch des baltischen Deutschtums* 44 (1997), pp. 159-162.

<sup>7</sup> TOIVO MEIKAR: *Balthasar Freiherr von Campenhausen und der Wald Sörve* (Sworbes), in: *Balthasar Frhr. von Campenhausen (1745-1800), seine Zeit und Gegenwart. Vabahärra Balthasar von Campenhausen (1745-1800), tema aeg ja tänapäev*, Tartu 1998, pp. 28-35.

### Origin of the Wardenburgs

The first bearer of this surname is considered to be Johann Wardenborgh, an alderman of Oldenburg in the late 15<sup>th</sup> century.<sup>8</sup> At the same time, similar name forms (Wardenbergh, Wardenberche, Wartberg, Wardenborg) date back to the early 13<sup>th</sup> century. Johann Wardenborgh's son was apparently also an alderman. Later one encounters royal and municipal officials, clergymen, customs officers and, since the 18<sup>th</sup> century, military men in the family.<sup>9</sup> Dietrich August and Friedrich Detlef Gustav, sons of a Danish major Johann Heinrich Nicolaus Wardenburg, were awarded a knighthood in 1833.<sup>10</sup> August von Wardenburg (1776-1856) is considered the forefather of the Danish line of the family which, however, died out in their homeland in the course of time. However, descendants of this branch of the Wardenburg family are living in the United States today.

The first forester from the Wardenburg family was Wilhelm Wardenburg. He was born July 12, 1776 in Varel (in the Grand Duchy of Oldenburg) and was a forester in Sandhatten. He died in 1830, probably in Sandhatten. He was the son of Anthon Wilhelm Wardenburg who was a brother of Johann Hinrich Nicolaus Wardenburg. So Wilhelm the forester is a first cousin of Friedrich Wardenburg and a first cousin once removed of Ernst Christian Ludwig von Wardenburg.

Friedrich von Wardenburg (1783-1867) worked as a legal adviser and customs officer in Husum, Germany. His son, Ernst Christian Ludwig, born of the marriage with Pauline Johanna Sophie, the daughter of the Danish general Karl Leopold Blücher, laid the foundation of the Saaremaa branch of the family.

Ludwig von Wardenburg was born in Husum (Schleswig) on December 31, 1810. After graduating from the local school as a hunting squire (*Jagd-junker*) in 1833, he studied and worked under forestry officers to acquire practical forestry experience: the professional certificates he received manifested his knowledge of forestry and hunting (*Forst- und Jagdwesen*) as well as surveying.

Ludwig von Wardenburg's interest in forestry was obviously associated with a rise in the level and the appeal of Danish forestry in the first half of the 19<sup>th</sup> century. As is known, in 1829 the University of Technology was established in Copenhagen. Forestry was introduced into its curriculum in 1832 or 1833. Perhaps Ludwig's cousin, August Bernhard Christian Ditlev Wardenburg (1814-1892), contributed to Ludwig's interest in forestry. In

<sup>8</sup> Genealogisches Handbuch der baltischen Ritterschaften, 4: Teil Oesel, ed. by NICOLAI V. ESSEN, Tartu 1935, pp. 418-422.

<sup>9</sup> THOMAS OTTO ACHELIS: Matrikel der Schleswigschen Studenten 1517-1864. 2: 1741-1864, p. 643, and Personen- und geographisches Register, p. 157, Kopenhagen 1966-1967.

<sup>10</sup> Danmarks Adels Aarbog 7 (1890), p. 142.

1838 August was a *forstkandidat*. Later he worked in different parts of Denmark as a forestry officer. It should also be mentioned that there was another luminary in Danish forestry who was related to Ludwig von Wardenburg – Friedrich Nicolaus Christian Harbou (1804-1871).<sup>11</sup> His mother was Charlotte Sophie Augusta Bernhardine Wardenburg.

However, the finding of a profitable position in his homeland appeared to be problematic, the more so because he had to compete with those who had acquired an academic education. At the same time favorable opportunities must have been presented by Russia, particularly its Baltic provinces that belonged to the sphere of German culture. In any case, when Czar Nikolai I was on a trip abroad in 1837 Friedrich von Wardenburg submitted a petition to the former to accept his son into the Russian state forest service. The petition referred to the Baltic provinces as the place of preference due to language problems. The response was positive and by July 1839 at the latest Ludwig von Wardenburg was in St. Petersburg. On August 28 (or August 14 according to the Julian calendar) he was examined at Department II of the Ministry of State Property (which dealt with state forests). The examinations manifested the candidate's satisfactory knowledge of theoretical and practical forestry as well as geodesy. The department decided that Wardenburg could work in the Baltic provinces as a junior forestry officer (*Förster, Unter-Förster*). On September 12 (August 30) Department II submitted a report on these events directly to the minister. This was accompanied by a recommendation to send Wardenburg, prior to his admission to the civil service, to the Lissino School of Forestry at the Forestry and Land Survey Institute of St. Petersburg for refresher studies. He was required to study the local sylvicultural situation and state forest management. Having accepted Russian citizenship, Wardenburg moved to Lissino in April 1840. The next year, on August 23, he was appointed to the Bureau of Administration of State Property of Livonia and was transferred to the Kuressaare/Arensburg forest district as a junior head forester on September 13 (September 1).<sup>12</sup> A letter of gratitude from Friedrich von Wardenburg to the Minister of State Property, Pavel Kiselyov, for providing the former's son with a job in Livonia is dated November 1, 1841.<sup>13</sup>

The coming of Ludwig von Wardenburg to Russia was a rather extraordinary move for a forestry officer since normally they found a job in the private forest service there. The state forestry organization was strictly centralized and regulated, and, what is more important, it had a paramilitary structure at the time. It was necessary to know the bureaucratic procedures as well as the Russian language. From the time of Nikolai I Russian was

<sup>11</sup> DE ROEPSTORFF (cf. footnote 5), pp 15-16; SVEND BALSLEV: *Danske forstkandidater 1786-1860* [Danish foresters 1786-1860], København 1986, pp. 19, 22, 23.

<sup>12</sup> Russian State Historical Archives (RSHA), F. 387, 1, 270, pp. 6-8, 13; Latvian Historical Archives (LHA), F. 185, 4, 196, p. 86.

<sup>13</sup> RSHA, F. 387, 1, 775, p. 50.



required even in the Baltic provinces. These and other factors practically precluded service in the state forestry organization by foreigners. Equally surprising was the special attention shown to the newcomer from Denmark by the highest officials, starting with the Czar. Thus Wardenburg had the attention of high state officials at least until his transfer to Saaremaa.

### Ernst Christian Ludwig von Wardenburg Head Forester in Saaremaa

The state forests on Saaremaa, Muhu/Mohn, and several smaller islands comprised the forest district of Kuressaare with a total area of about 11,000 hectares. Its management was on a remarkably high level for its time. By 1795/96 an up-to-date and thorough management had been completed in the more extensive forest of the Sõrve/Sworbe Peninsula. By the 1830's the more important production forests of the district were being managed and descriptions that virtually amounted to management programs had been prepared for all forests. Regular clear felling was introduced in the production forests. This was followed by the cultivation of the clear cut areas, if necessary. In several sparsely forested regions (for instance the island of Muhu), a systematic forestation of inferior pasturelands with limestone subsoil was started. This was supplemented by the forestation of fallow lands (sandy regions and pasturelands) also on Saaremaa. An efficient system of forest seed storing was organized. This allowed Saaremaa to also supply forest seed to state forest districts on the continent. The seed was even shipped to Russia in large quantities. These achievements in the state forests also served as models in the organization of more modern forestry on private estates, which also undertook their first forest management practices in the mid-19<sup>th</sup> century.

Upon the arrival in Saaremaa of Ludwig von Wardenburg the post of head forester there was held by the local land owner Karl Pontus von Nolcken. Wardenburg replaced him in the office in 1845. Earlier, in 1842 he had married Hermine Marie von Güldenstübbe. In 1843 their son Eugen had been born. In 1849 Ludwig von Wardenburg was received into the Knighthood of Saaremaa. He quickly adjusted himself to the new environment. Although German was used in day-to-day business and initially also in the forest service administration, Wardenburg had picked up some Russian during his stay in Lissino. After arriving in Saaremaa, he quickly learned Estonian as well, which is demonstrated by his announcements and orders to local inhabitants written in Estonian.

The state forests of Saaremaa that were combined under the Kuressaare forest district were described in 1847/48 in accordance with the instructions for the description of state forests published in Russia in 1844. The compiler of the description, as appears from the signature on it, was Ludwig von

Wardenburg, the head forester, also Warrant Officer and later Second Lieutenant.<sup>14</sup>

In the Wardenburg period the state forests on Saaremaa were managed on the basis of the previous management programs. More comprehensive forest management activities started in the 1860's, when he started a new program of forest management in the state forests of Saaremaa in accordance with the Russian instructions for simplified forest management issued 1859.

One of Wardenburg's most notable accomplishments was the establishment of forest plantations. On his initiative and under his leadership about 470 hectares of forest plantations were established there between 1842 and 1869. This was 26 hectares per year. In addition to the reforestation of clear cut areas Wardenburg continued the forestation of fallow lands, which constituted one third of the plantations. Forest sowing was predominant. To a smaller extent tree planting was also done. 51 per cent of the land was planted in pine and 30 percent with the blended cultures of pine and spruce. The share of spruce amounted to five per cent, with the rest being deciduous trees, primarily birch. An average of 414 kg of conifer seed was gathered each year, of which five per cent was sent to other forest districts. Such a large quantity of seed was needed due to the forest sowing that was predominant at the time. Particularly seed-consuming was full-scale sowing that was primarily used in the forestation of fallow lands.<sup>15</sup>

Due to the density of forest plantations, improvement felling was initiated under Wardenburg. Also associated with him was the more extensive program of forest drainage (a total of about ten kilometres of drains were dug). The scope of felling was relatively modest – approximately one cubic meter per hectare. Additionally, fallen trees were cleared from the forests. The frequent debris caused by wind could be quickly removed. To keep cattle away from the woods the fencing in of local forests was started, in part by using stone walls.

On January 27 (15), 1869, Ludwig von Wardenburg retired from the civil service, turning his forest district over to his son. The latter was appointed the new head forester on June 5 (May 24). At that time the 11,750-hectare forest district (of which forest land covered about 10,000 hectares) was divided into 37 forest areas of different sizes (6-1650 hectares). 64 per cent of the forests were considered as being managed according to the regulations. As for the

<sup>14</sup> BERNHARD ALEKSANDER TUISKVERE: Eesti metsadest möödunud sajandil. V Kuressaare metskond [On the forests of Estonia in the last century. Part 5: The forest district of Kuressaare], in: *Eesti Mets* 10 (1938), pp. 345-349.

<sup>15</sup> TOIVO MEIKAR: Metsakultuurid Eesti- ja Liivimaa kubermangude riigimetsades (kuni 1870. aastateni). [Forest plantations in state-owned forests of the provinces of Estonia and Livonia (until 1870)], in: *Metsanduslikud uurimused* 26 (1994), pp. 21-22; IDEM: Eesti riigimetsades kasutatud metsaseemnest (ajalooline ülevaade) [On forest seed used in state-owned forests of Estonia (a historical overview)], in: *Dendrological Researches in Estonia* 1 (1999), pp. 89-90.

rest, either their management programs were outdated or they were not production forests. The list of employees of the forest district included a ranger as well as 32 forest guards. According to the forest description data appended to the deed of transfer the majority of the forests was in good condition and properly managed. Noteworthy is the systematic execution of various forest management improvements (cultivation of seedlings, drainage, improvement felling, etc.). The forest land area had been extended by about 720 hectares through sowing or planting seedlings on fallow lands. Part of the smaller forests taken over from state farms that were in worse condition was excluded from the felling list for 10-20 years.<sup>16</sup>

In his last years Ludwig von Wardenburg lived in seclusion in Kuressaare, where he died on February 9 (January 28), 1886.

### The Head Forester of Kuressaare Friedrich Ludwig Eugen von Wardenburg

Eugen von Wardenburg was born in Kuressaare in January 1843. Following his graduation from the local gymnasium (high school) he studied chemistry and economics in the universities of Zürich (1862-1863) and Berlin (1863-1865).<sup>17</sup> After returning home he worked first as an assistant director of the economic administration of the county. While performing this work he also acquired, on his own initiative, some knowledge of forestry since contrary to custom he was appointed the head forester of Kuressaare replacing his father who retired in 1869. The next year he married Ottilie Karoline von Nolcken, daughter of Pontus von Nolcken, the former head forester and direct superior of his father. Nine children were born into the family.<sup>18</sup> Two of the three sons later also had careers in forestry.

After taking his father's place Eugen von Wardenburg finished the forest management projects already begun. These continued projects were completed by special forest surveyors. As the payments owed by state farmers were converted from rent paid in produce to monetary rent in 1870 the forest districts lost the free labor they had enjoyed. However, very few funds were allocated for carrying out forest management works projects. This resulted in a drastic reduction in the extent of forest management projects, including the establishment of plantations, in the state forest districts of the Baltic provinces. The forest district of Kuressaare was almost the only one able to maintain a more or less stable operation, an average of 14 hectares per year from 1870 to 1898, which constituted about 30 per cent of all the projects performed in the then state forest districts of Livonia. At that time the forest district of Kuressaare became the most important center for supplying forest

<sup>16</sup> Estonian Historical Archives (EHA), F. 566, 2, 1309, pp. 7-44.

<sup>17</sup> H. STAVENHAGEN: *Album Academicum der weil. drei Corporationen: Baltica in Zürich, Livonia in Carlsruhe, Baltica in Carlsruhe*, Jurjew 1900, p. 49.

<sup>18</sup> *Danmarks Adels Aarbog* 7 (1890), p. 142.

steed to the state forest districts in the entire region. Between 1899 and 1914 the extent of plantation projects in the forest districts reached a total of 900 hectares. This was about 50 hectares per year, which corresponded to the actual area of clear cut fellings.<sup>19</sup> Forest utilization was confined to a prescribed yield; improvement felling was performed on a modest scale yet consistently, etc. The second half of the 19<sup>th</sup> century brought about a need to pay greater attention to forest protection in some places since the frequent wind breakage was accompanied by damage from insects, primarily bark beetles. The staff of the forest district was also consolidated – the positions of assistant forester and ranger were created in addition to that of head forester. In 1901 a position was established for an official to manage forest plantation works. Before the First World War the forest district had two assistant foresters, five rangers, and up to 34 forest guards.

Since he had distinguished himself by his work, Ludwig von Wardenburg was permitted to train assistant foresters. He was the only head forester of state forests in the province of Livonia to receive that honour. After successfully completing the 2-3-year course the trainees had to pass the exams at the Lissino School of Forestry. The courses which lasted until 1892 were attended by at least 25 Estonian forestry officers who came primarily from Saaremaa. Several of them distinguished themselves as head foresters or employees of the central institution of forestry in the later Republic of Estonia, though these courses staff was trained to also meet the district's own needs. Thus the local assistant foresters and forest plantation officials were usually graduates of the local school. The successor to Ludwig von Wardenburg and the later head forester of the county was his student Teodor Ermus.

In addition to his regular professional duties Ludwig von Wardenburg was also involved in the organization of a more modern forestry system in private forests as well as in the direct management of several estate forests. The state forest district assisted private forests in establishing plantations. The forest conservation law of 1888 placed the estate forests under the control of the state. The direct execution of the work was also left to the local head forester of the state forests. By 1914 56 per cent of the local estate forests were being managed and administered more or less according to the management programs. In the rest of the forests the utilization process was relatively modest, being confined primarily to sanitation felling.

Thanks to the organization of a more regulated and productive forestry, the timber balance on the island improved over the years. Timber had been brought in from the island of Hiiumaa/Dagö and the province of Courland as late as the mid-19<sup>th</sup> century. In 1880 the resources of the forest district were sufficient to meet the local need. At that time the island of Saaremaa also

<sup>19</sup> TOIVO MEIKAR: *Metsakultuurid Liivi- ja Eestimaa kubermangu riigimetsades* (1870.. 1917) [Forest plantations in state-owned forests of the provinces of Livonia and Estonia (1870-1917)], in: *Metsanduslikud uurimused* 27 (1996), p. 7, 14; IDEM: *Eesti riigimetsades kasutatud metsaseemnest* (cf. footnote 15), pp. 98-99.



started to sell firewood to Riga and Tallinn. By 1890 the island was able to export wood (primarily logs and to a smaller extent sawn wood). By the early 20<sup>th</sup> this century timber had become the most important export.

Ludwig von Wardenburg's contributions to the spreading of nature preservation ideas and the resulting preservation of natural resources need to be appreciated. When the Saaremaa Society of the Friends of Nature was founded in 1913 (which operated until 1915) on the initiative of Aristokli Hrebtov (1876-1944) and began actively promoting nature preservation on the island, Ludwig von Wardenburg participated in its activities.<sup>20</sup> In 1913 the Society formulated a plan to extend the nature preservation law to the broad-leaved forest on the island of Abruksa, which is unique in Estonia (the matter remained unresolved owing to the outbreak of war). However, by that time the head forester had already rendered practical support to the idea, having been able to avert more intensive economic activity there since the beginning of the century.<sup>21</sup>

Eugen von Wardenburg's career as a head forester was interrupted due to the outbreak of World War I apparently because of political considerations. Albeit a citizen of Russia he was still a suspicious person in the border zone on account of his origin and connections. Moreover, the district was situated in a region of maritime fortifications and a military base. It was also no secret that the head forester had been at loggerheads with the military authorities who ravaged the local forests to build coastal batteries. Eugen von Wardenburg died in the Republic of Estonia, in his native town of Kuressaare, on February 11, 1920.

### Conclusion

The island of Saaremaa has a special place in the history of Estonian forestry. The isolated location of the island and the relative scarcity of its forests were the factors that forced the local authorities to pay early attention to careful and productive utilization of the forests. In the course of the organization of land utilization and the reorganization of agrarian relationships begun in the second half of the 18<sup>th</sup> century the tracts designated as sylvicultural areas were separated from other arable lands and the more purposeful management of forests was started. Since the larger part of the forests in the region belonged to the state the decisive factor here was the state's initiative. It is important to note that the head of the Saaremaa land exploitation projects was Deputy Governor Balthasar von Campenhausen. His

<sup>20</sup> ENDEL VAREP: Rahvakoolide inspektor H. Hreptov ja tema tegevus looduskaitse alal Eestis [Inspector of Schools A. Chrebtov and his activity in the field of nature conservation in Estonia], in: Looduskaitse ja ökoloogiline kasvatus Eestis, ed. by VIKTOR MASING, Tallinn 1990, pp. 97-112.

<sup>21</sup> TOIVO MEIKAR: Abruksa saare mets [The forest of Abruksa island], in: Akadeemia 12 (1992), pp. 2600-2612.

name is associated with the birth of forestry as an independent branch of the economy in Livonia and Estonia. In addition to other activities he also introduced one of the most perfect forest management systems of its time in the state forests of the Sõrve peninsula in 1795/96. This served as a basis for the management of the local forests until the 1860's.

The beginning of the 19<sup>th</sup> century in Saaremaa is associated with the name of Karl Heinrich von Uexküll-Güldenband (the head forester in 1799-1820). He started extensive plantations and continued forest management projects there. Later, as head forester of the province, he arranged for the management of virtually all the local state forests in accordance with his own regulations. It must also be mentioned here that by the early 19<sup>th</sup> century the state forests of Saaremaa were acclaimed as being managed in the most exemplary fashion in all of Russia. The example was later followed by the local private forests.

These achievements, however, paved the way for the period of the Wardenburg family, which was the most prolonged as well as most fruitful period in Saaremaa. The period was important not only from the perspective of the management of the forests of Saaremaa, but also for a number of endeavors (supplying other state forest districts with forest seed, training local people to become forestry officers, etc.) which assumed a wider significance.