

The establishment of a scientific field: The history of reindeer husbandry research in Sweden 1900-1970

Patrik Lantto

Centre for Sami Research, Umeå University, SE-901 87 Umeå, Sweden (Patrik.Lantto@cesam.umu.se).

Abstract. The focus of this article is the development of reindeer husbandry research as a scientific field within the natural sciences, 1900–1970. Up until after World War II, research within this field was mostly carried out by social scientists, while it was given very limited attention within the natural sciences. From the late 1940s this changed, as interest in reindeer husbandry research grew and more academic disciplines became involved, and during the following decades the field became established. The article examines research initiatives focused on reindeer husbandry within the natural sciences during the first half of the 20th century, discussing the motives for these studies as well as why they did not lead to the establishment of a scientific field. It then turns to the development after World War II, analyzing why reindeer husbandry research was established so quickly, and how the field developed up until 1970, both nationally within Sweden and as a Nordic cooperation.

Key words: reindeer husbandry research; history; natural sciences; Swedish Sami policy.

Rangifer, 31 (1): 91 - 109

Introduction

In 1948, agronomist Gösta Dahlander proposed the establishment of a Swedish research and experimental institute focused on reindeer husbandry.¹ Though he had been active only a little more than a year within this specific research field, the vision he presented would be realized within a few years. One main reason for this success was that Dahlander's proposal targeted an important gap in Swedish research, where the natural sciences previously had only been involved to a limited degree with issues concerning reindeer husbandry, despite the industry's long history in Sweden. The proposal also came at an opportune time, when the Swedish Sami policy was beginning to change

– a process in which reindeer husbandry research would come to have an important but as yet undefined role. The present article will give a brief historical overview of the development of reindeer husbandry research in Sweden during the first half of the 20th century, discussing some problems within this field as well as some reasons for them. It will then look at Dahlander's proposal, and the reception it received, as well as at how reindeer husbandry research became established nationally after World War II, and developed into a Nordic cooperation during the following decades. An introduction will briefly describe the Swedish Sami policy until World War II to place the

research field into the political context of that time. The continued development of the policy field will then be integrated into the subsequent sections.

The Swedish Sami policy

During the last decades of the 19th century, the Swedish Sami policy, which previously had lacked a clearly stated goal, became more structured. It was based on a view of cultural hierarchies according to which a nomadic people like the Sami were considered to be inferior to the Swedish agricultural and industrial society (Mörkenstam, 1999; Lantto, 2000b). The policy was centered on a view of the Sami as reindeer herders, endowed with a physique uniquely adapted to this industry and to this specific animal, which Bishop Olof Bergqvist argued in a well-known statement: “The reindeer is created for the Lapp² and the Lapp for the reindeer” (Motioner, 1908, 41). The categorization of a group, and normative statements about its character, defines the policy; only certain solutions are possible within the framework created by a specific image (Mörkenstam, 1999). The focus on the Sami as reindeer herders meant that other aspects of Sami culture as well as other livelihoods were marginalized, and in the end excluded; the group was considered to be homogenous.

According to this image established in Sami policy, the so-called “*Lapp shall remain Lapp*” view, the Sami should be preserved as reindeer herders, as their physical and psychological adaptation to the nomadic life of reindeer husbandry was considered so extensive that they were unable to support themselves through other professions (Protokoll, 1913, 52). But the industry and the Sami were viewed as threatened, the expansion of agriculture limited the grazing areas and led to conflicts, and increasing contacts with the “more developed” Swedish culture led to a demoralization of the Sami, which undermined their nomadic

character and thus threatened their future. If the Sami were to leave reindeer husbandry, it would mean the end of them as a people – a development Sami policy was aimed at preventing. The goal of the Sami policy was to segregate the Sami from the detrimental influences of Swedish society and thus preserve reindeer husbandry. This goal also harmonized with the economic interests of the state. At this time, reindeer husbandry was seen as the only industry that could utilize large parts of the interior of northern Sweden, and was thus of national importance (Lantto, 2000b, 39–42). The “Lapp shall remain Lapp” view was dominant within the Swedish Sami policy for a long period, and it was not until after World War II that the importance of this view gradually waned.

From an international perspective, the historical subordination of Indigenous peoples has been a common theme in state policies, a pattern which the Swedish Sami policy has followed. The goal to segregate and preserve the Sami was, however, more unusual, as assimilation has been a more common goal of Indigenous policies. This was e.g. the case with the Norwegian Sami policy as well as the Indian policies of both Canada and the United States.

The two most important tools in the work to implement Sami policy were the Reindeer Grazing Acts (RGA) and the Lapp Administration (LA). To protect the grazing land of the Sami from further encroachment, and thus to preserve the Sami, the first RGA was enacted in 1886 (SFS 1886:38). It was meant to regulate the relationship between reindeer husbandry and agriculture, but also became an instrument for control over the Sami. Through close supervision of the Sami and of reindeer husbandry, the idea was that they could safely be led past the threats that loomed around them. Two new RGA:s were enacted in 1898 and 1928, respectively, which strengthened the control aspects of the legislation (SFS

1898:66; SFS 1928:309). The RGA created a framework for achieving control, but it was not enough. Knowledge concerning the Sami was limited within the regional authorities, the County Administrative Boards (CAB), in the three northernmost counties in Sweden, Norrbotten, Västerbotten and Jämtland, where reindeer husbandry was conducted and where the majority of the Sami lived, and the seats of these administrations were placed far from the traditional Sami areas. For this reason, a new governmental body was created in 1885, which would focus solely on Sami issues: the LA. The work within the LA was led by Lapp Bailiffs, one each in Västerbotten and Jämtland and three in Norrbotten, and the authority had a key role in implementing Sami policy and supervising the Sami. The position of the LA remained relatively unchanged up until 1971, when the authority was officially closed down (Lantto, 2011).

The first research steps in the early 1900s

During the first half of the 20th century, a large number of studies focused on the Sami people were produced within social sciences in Sweden, many of which also focused on reindeer husbandry. Researchers such as K. B. Wiklund (1903), Björn Collinder (1932) and Ernst Manker (1934) are some of the more well-known names contributing to the field. Given that reindeer husbandry was the focus of Sami policy and a central part of the official image of the people, it is only natural that the industry was an equally important component of the research field. However, this research had mainly a historic and/or ethnographic perspective, focusing for example on traditions within reindeer husbandry and its role in Sami culture. The focus on traditions also implied that the industry was not part of modern society and would and should not change.

The position of reindeer husbandry in natural science research was very different. While

a great deal of attention was directed at developing forestry, agriculture and the handling of domesticated animals, reindeer husbandry was largely neglected. One very plausible reason for this was how the Sami and the industry were viewed. The Sami were considered to be part of nature – they were even described as such when the first national parks were installed at the beginning of the 20th century (Betänkande rörande, 1907, 49) – and in their relationship with the reindeer, the Sami were more often than not seen as simply following the animals on their yearly migrations and not controlling them. From this perspective, reindeer husbandry was not viewed so much as an industry but rather as part of a natural cycle, one that the state should aspire to influence as little as possible. Research to develop or modernize the industry would thus not be compatible with Sami policy. Even though it was considered of economic importance for the northern parts of the country, this aspect of reindeer husbandry was subordinate to the goal of Sami policy.

Despite this perspective, some research was carried out during the first half of the 20th century, and the initiatives for this work mainly came from two different directions. The first was national committees and international commissions working on reindeer husbandry issues. While the national committees produced some reindeer husbandry research, it was the Swedish-Norwegian commissions – working during the first two decades of the 20th century to finalize an agreement between the two states concerning the trans-border reindeer husbandry – that made a more significant contribution to the field. These investigations were, naturally, largely focused on issues concerning grazing lands and grazing pressure, while many other issues were left out. One example of the results of this work is a study by Einar Lönnberg (1909), professor in zoology, which focused on the subspecies *Rangifer tarandus tarandus* and breeds or populations

within this subspecies, and on their migration and food sources. In connection to his work, two young botanists, Erik Bergström and Thore Fries (1909), published a study of the grazing land above the forest line in Karesuando and Jukkasjärvi parishes.

The second source for initiatives in reindeer husbandry research was state authorities, and these studies mainly focused on reindeer diseases and parasites. The State Medical Board was responsible for monitoring disease outbreaks among the reindeer in Sweden. In cases considered to be less serious, local veterinarians were sent out to observe developments and report back to the Board (e.g. *Svensk Veterinärtidskrift*, 1909, 408; *Svensk Veterinärtidskrift*, 1913, 351-352; Brandt, 1914). In more severe cases, the task of investigating the issue was passed on to more established researchers, which resulted in a number of studies. Professor John Lundgren (1897; 1898a; 1898b), a veterinarian, published several reports on an outbreak of what was called reindeer plague³ in Jokkmokk during the mid-1890s. He considered the disease to be serious, but argued that it would be hard to treat using common methods for other domesticated animals, particularly because the Sami “hardly have any control over their animals.” For the same reason, Lundgren also considered it impossible to prevent the reindeer from visiting areas where outbreaks of the disease previously had been reported. Still, he did leave a number of recommendations to the CAB of Norrbotten to try to limit further outbreaks (Lundgren, 1898b, 11-12). A few years later, fellow veterinarian Arvid Bergman (1901) published a study on the bacteria causing reindeer plague³, based on samples collected by Lundgren.

Starting in 1911, the then newly established National Veterinary Institute began carrying out the actual research on reindeer diseases, even though the Board maintained the overall responsibility. Bergman, who in 1911 became

professor and was appointed the first director of the Institute (Bergman, 1923, 1; Hjärre, 1944, 9), was especially active within the field of reindeer husbandry research, both concerning diseases and parasites, and would publish several studies on a wide range of topics. His first study from the late 1890s focused on the reindeer botflies⁴, a topic he would develop further two decades later. He revealed how the botflies attacked the reindeer and discussed possible methods to eradicate these parasites (Bergman, 1899; 1917). During 1918-1919, he carried out further field work on prevention of the damage caused by botflies, a line of work that was continued by the county veterinarian from Kalmar (in southern Sweden), Theodor Helleborg, a decade later.⁵ Bergman also conducted studies on outbreaks of foot rot⁶ (1909)⁷ and keratitis⁸ (1912). Together with bacteriologist Christian Barthel, Bergman even wrote an article on the nutrition value of reindeer milk and reindeer cheese (Barthel & Bergman, 1913). An early colleague of Bergman at the Institute, veterinarian Hilding Magnusson, also did some research on reindeer. Apart from assisting Bergman, Magnusson published a study on pasteurellosis⁹ (Magnusson, 1913; Brandt, 1914). Magnusson left the Institute after a few years, but would later work extensively on foot-and-mouth disease¹⁰, and in the process he carried out some experiments testing whether the disease could be contracted by reindeer (Magnusson, 1927; *Protokoll hållet*, 1927, 315-316).

In their research, Bergman and Magnusson showed a higher level of understanding of reindeer husbandry and the difficult conditions faced by the industry than had their predecessor John Lundberg. Whereas Lundberg had criticized the Sami for lacking control over their reindeer, Bergman and Magnusson recognized that the dispersion of herds was a tried and tested Sami method for limiting the effects of disease outbreaks among the animals

(Bergman, 1912, 3; Magnusson, 1913, 133). This minimized the likelihood of sick reindeer infecting healthy ones, and the method was actually praised by Magnusson (1913, 182). This issue was also connected to a discussion concerning reindeer husbandry methods that would be ongoing during the interwar period. Up until the beginning of the 20th century, what was known as intensive herding was the common method among the Sami in the area from Jämtland to southern Norrbotten. The herds were smaller and held under more strict supervision, and milking of reindeer cows was common and one reason for this method. This created a very fertile ground for spreading of diseases, and because of the milking, the reindeer calves were weaker and more susceptible to these diseases. During the first decades of the 20th century, and especially during the interwar years, there was a relatively rapid shift toward what was described as extensive herding methods, which was already established in northern Norrbotten. The herds were larger and allowed to wander more freely, as herders were satisfied with keeping the animals within a certain area. Extensive herding was aimed solely at meat production, and milking did not occur. This minimized the risk of spreading disease, and the calves were stronger. However, the regional authorities tried to prevent this development, because they saw it as a degeneration of “good” traditional Sami herding methods where the herders always followed and had control over their herds. Even though the authorities managed to slow the process of change, in the end it was a losing battle, not least because it helped to limit disease spread (Lantto, 2011).

Issues of reindeer diseases and parasites only made up a small percentage of the work done by the Veterinary Institute, however, and a decreasing percentage at that, as the operations expanded rapidly during the initial years. In two reports, describing the first ten and twelve years, respectively, of the Institute’s activities,

work concerning reindeer was only mentioned in the first one, in connection with an unpublished memo Bergman had written to the Swedish-Norwegian reindeer commission in 1918, concerning suitable responses from authorities in cases of outbreaks of contagious reindeer diseases on either side of the border (Bergman, 1921, 15; Bergman, 1923). Magnusson had left the Institute after only a few years, and Bergman had less and less time to do research within the field. In 1919 he was, for instance, forced to abort his work on trying to eradicate the reindeer botflies due to lack of time (Bergman, 1920, 13). After Bergman’s death in 1923, reindeer issues disappeared almost completely from the Institute’s agenda.

The State Medical Board received their initial reports on outbreaks of reindeer diseases from the CAB, and the work was often carried out in close cooperation with the LA. In some cases, these regional authorities also initiated research when they saw specific problems connected to the reindeer or the industry. One example was the concern that reindeer lichens were declining. In 1899, the Lapp Bailiff in Jämtland, Axel Frändén, started to investigate reports from Sami herders that reindeer lichens were becoming scarce. Since these are an important staple food for the reindeer during winter and have a relatively slow growth, such reports were worrying. Theories used to explain the problem included increased ice formation on the lichens during winter, destruction by lemmings or voles, trampling of the dry lichens during summer by free ranging reindeer, and/or the lichens being covered and damaged by branches, bark and other rest products from forestry. After consulting with his colleagues in Västerbotten and Norrbotten, Frändén was convinced that the problem was becoming widespread and that it was necessary to act to try to find a solution to prevent reindeer husbandry from facing a potential future disaster. The Bailiff, with the support of the CAB, managed to se-

cure funds to have a botanist from Uppsala University with an interest in lichens, Teodor Hedlund, investigate the matter in Jämtland (Bidrag till, 1896-1900, 4-5; Bidrag till, 1901-1905, 4).¹¹

Hedlund was planning to publish his results, but I have not been able to find such a publication. However, this issue was discussed in a private members bill to the Swedish Parliament in 1908. The bill included a summary of the results of Hedlund's study, as reported by Frändén's successor as Bailiff in Jämtland, Abraham Staaff. According to his summary, the lichens were indeed decreasing in the county due to too high grazing pressure during the 1880s, the slow re-growth of the lichens, forestry, and climate change, which included drier air and increased icing of the lichen during winter. Although Hedlund made some recommendation to limit the damages, he was pessimistic about the possibilities for the reindeer lichens to increase to any great extent (Motioner, 1908, 2, 28-31). However, nothing concrete came out of this report or the bill, and Hedlund's conclusion that the lichens were decreasing at an alarming rate did not seem to hold up, since reindeer husbandry continued as before.

These examples of reindeer husbandry research in Sweden during the early 1900s reveal several problems. The research was sporadic, the projects not connected to each other, and there was not necessarily any feedback to the herders. The researchers came to the Sami communities, carried out observations, took samples, and then left to later publish their finds. If anything further were to come out of the reports, it depended on the time and interest of individual researchers. One obvious problem with the studies on diseases was that they primarily seem to have been focused on observation rather than prevention. When researchers were called in, the outbreak was often over, and their work was confined to identifying the disease and at best offering recommen-

dations as to how to prevent future outbreaks.¹² But without follow-up work and experiments, the hope for positive results was limited. The studies were not part of any concerted effort to increase scientific knowledge of reindeer and reindeer husbandry in an effort to improve the industry. In addition, some of the researchers in the field did not seek cooperation with the herders, but instead questioned both their knowledge and their willingness to share it. The very poor state of the reindeer husbandry research in Sweden can be illustrated by a statement from 1948 made by the Lapp Bailiff in Västerbotten, Hilding Johansson. A number of years earlier he had sought a lecturer who could talk to the herders in the county about reindeer diseases and how to prevent them, but had been unable to find a researcher with knowledge in the field.¹³ What makes his statement remarkable was that reindeer diseases had been the area that had received the most attention by researchers, but for more than two decades after Bergman's death there was no prominent natural scientist who showed an interest in the field.

The fact that the sporadic research in this field was a problem was pointed out from time to time. Bergman (1909, 39-40) indicated this himself in his report on the outbreak of keratitis among reindeer in Västerbotten. The fact that he travelled to the county the year after the outbreak made studies of the disease as well as developing possible preventions for future use more difficult, a dilemma his predecessor Lundberg had shared in his investigation of the reindeer plague in 1897. As a solution to such problems, Bergman argued for more systematic Swedish research on reindeer diseases and parasites, not least owing to the economic importance of the industry for the Sami. Two decades later, attention was again called to the deficient Swedish reindeer husbandry research by K. B. Wiklund (1929, 94-96), professor in Finnish-Ugric languages. He pointed to the

studies on reindeer diseases as being the only tangible Swedish achievement so far, but emphasized that the country was falling behind when it came to the technical development of reindeer husbandry, e.g., in areas such as breeding methods and use of grazing lands. Countries like the Soviet Union, the United States – where reindeer husbandry had been conducted in Alaska only since the 1890s – and the neighboring Nordic states were all ahead of Sweden in these areas. A few years later, a government committee also suggested research in several areas concerning reindeer husbandry, such as breeding, the control of parasites and the growth of reindeer lichens (SOU 1936:23, 315). Despite these sporadic demands for research initiatives, it was not until after World War II that the field would begin to develop in earnest.

A new beginning after WW II

In 1947, Gösta Dahlander applied for 30 000 SEK from the Agricultural Research Foundation for a research project focused on reindeer and muskoxen. Dahlander, who was born in 1885, had the previous year returned from Germany where he had worked since 1916. He had not secured a position after his return, but had received some funding from the LA in Norrbotten to work on experiments concerning reindeer breeding, and had also produced a study that discussed the possibilities of introducing muskoxen from Greenland in northern Sweden. The application was thus an expansion of Dahlander's previous work.¹⁴ The inclusion of both these animals in his approach was similar to the attempts to establish reindeer husbandry in Canada during the 1910s and 1920s, where polar explorer Viljamur Stefansson had been an especially strong proponent for the domestication of both animals (Canada, 1922; Porsild, 1929; Diubaldo, 1978, 135-160; Hunt, 1986, 169-171; Waiser, 1989). Dahlander was familiar with the Ca-

nadian experiments, and it is possible that this was the reason for his double approach. He stated, however, that issues concerning reindeer husbandry would be his main focus, and that the establishment of muskox herds in Sweden was subordinate. Dahlander wanted to focus his reindeer husbandry research on some central areas such as breeding, investigations of grazing lands, experimental work to develop supplemental reindeer forage, and measures to protect the reindeer from parasites.¹⁵ His initial double approach would soon give way to a unilateral focus on reindeer husbandry, and his initiative would create the foundation for a new and important scientific field in Sweden.

As the research area was new to the Agricultural Research Foundation, it requested assessments of the project from a number of people, before finally deciding to give Dahlander a grant of 8500 SEK.¹⁶ Despite receiving less than a third of what he had applied for, Dahlander was nevertheless very positive about the possible outcomes of the project after his initial work, which contributed to a renewed proposal for funding, this time to establish a research and experimental institute solely focused on reindeer husbandry. As K. B. Wiklund had before him, Dahlander pointed to the reindeer husbandry research being carried out in many other countries, and how this work had helped develop the industry. He considered the Soviet research to be important, but specifically highlighted the work of American scientists in Alaska and particularly the establishment of an experimental station in 1920, which he regarded as one of the main reasons for the impressive growth of the reindeer herds in the state. Dahlander argued that the research carried out in other countries could help develop reindeer husbandry in Sweden, as long as it was applicable to the situation and conditions here. But the single most important factor was the example of the successful experimental station in Alaska, on which he wanted to model the pro-

posed research station in Sweden. The Alaskan station had started small, and then grown as the workload increased, and Dahlander argued for a similar approach in Sweden when he proposed the establishment of a research station in Kiruna. In that area, three mountain Sami reindeer herding communities and one forest Sami reindeer herding community would be within reach, which made it a suitable location. Apart from following the development of reindeer husbandry research in other countries and trying to implement some of these results in Sweden, the station should study biological, veterinary and economic issues connected to reindeer husbandry, with the goal of obtaining results that could have a practical application in the industry. Fully developed, Dahlander argued that the staff of the station should consist of one director, two assistants, one secretary and two herders. As few agronomists or veterinarians had interested themselves in reindeer husbandry thus far, it could take some time before the necessary expertise could be found or, more probably, trained, but Dahlander saw himself as a suitable first director of the station.¹⁷

In his original application, as well as in his proposal for a research station, Dahlander had been very explicit in his view that close cooperation with the LA was necessary for the projects to be successful. Through such collaboration, the experience and knowledge of the Lapp Bailiffs could be used, while the authority at the same time could ensure that the results of the research not only were made available to the Sami, but actually implemented in the work with the reindeer. These initiatives were met with strong support from the CAB and LA in Norrbotten, who pointed out that there had been very little research within the field. The LA argued that the work Dahlander had carried out so far was of great importance to the industry, but that only continuous research over time could generate long-term improve-

ments. Lapp Bailiff Erik Hedbäck was especially positive, and in a letter to his colleague Hilding Johansson, he emphasized the importance of the establishment of “a special little institution for research in the field of reindeer husbandry,” and implored Johansson to be supportive of Dahlander’s initiative.¹⁸

Dahlander also received support from Lennart Berglöf, who during the entire 1940s investigated different issues connected to the Sami and reindeer husbandry, and as such more or less functioned as an informal minister of Sami affairs and was asked to give his opinion on most matters concerning the Sami (Lantto, 2000a). Berglöf was somewhat cautious in his comments on Dahlander’s original application for research funding, and he argued that Dahlander was aiming to do more than would be possible for one person, and that some of the issues raised by Dahlander already had been dealt with in previous research – where Bergman’s work on the reindeer botflies was mentioned specifically – and by government committees. Breeding selections and the development of supplementary reindeer forage, however, were two areas where Berglöf would like to see more work and saw an opportunity for Dahlander to make a real impact. In his comments on the proposed research station, Berglöf was more positive, in part probably because of the strong support Dahlander’s work had received from the regional authorities in Norrbotten, and he now pointed out that reindeer husbandry could benefit from strong research in the field. Based on this, Berglöf supported the establishment of a station on a trial basis during a period of five years.¹⁹

In Västerbotten and Jämtland, however, the responses to Dahlander’s proposals were more varied. Despite the efforts by Hedbäck to sway the Västerbotten Bailiff Hilding Johansson, he was not convinced. Johansson was positive to strengthened research on reindeer husbandry – especially on reindeer parasites and diseases

– but he was somewhat doubtful as to whether this work would actually lead to any tangible improvements of the industry. He also emphasized that there were major differences in the large geographical area in Sweden in which the Sami grazed their reindeer, which was an argument against the establishment of a permanent research station. Johansson clearly feared that a station placed in Norrbotten would focus on issues relevant in that county, but perhaps of less importance in the two more southern counties. He therefore argued for a more thorough investigation before a decision was made concerning a research station. The CAB in Västerbotten supported his view and opposed the establishment of a permanent research station, and instead argued for focused research efforts on issues and in geographical areas where specific needs could be discerned.²⁰ In 1948, the Lapp Bailiff in Jämtland, Waldemar Gardham, who had opposed funding for Dahlander's initial proposal, was positive to both strengthened research on reindeer husbandry and the establishment of a research station. He was, however, doubtful as to whether the Sami would accept any suggestions for changes, especially if these came, or appeared to come, from state authorities: "The Lapps are perhaps more than other people captured in older concepts; [...] and they are often dismissive of suggestions from the Lapp Administration." He connected this negative attitude to the Sami political movement.²¹

Despite these negative responses from some of the regional authorities, Berglöf was assigned to develop a plan for how reindeer husbandry research in Sweden should be organized,²² a task he completed in May 1949. In contrast to his response to Dahlander's first application, Berglöf now emphasized how little interest there had been in reindeer husbandry in natural science research. The field was thus virtually limitless, but Berglöf considered it important that the initial projects should focus on issues that

could have an immediate impact on and be of direct importance to a strengthening of the industry. With this in mind, he singled out three particularly significant fields: the development of supplemental reindeer forage, protecting the animals against botflies, and improving breeding practices. He also suggested work on, e.g., slaughtering and castration methods, and reindeer diseases. The establishment of a research station was necessary to realize these goals, and to be able to conduct experiments on reindeer it was essential that such a station could utilize a large area to hold the animals under relatively natural conditions. Berglöf suggested the Gällivare area in Norrbotten as a suitable location, an area that also would give access to both mountain and forest reindeer. Initially, the staff should be small, with only a director and one assistant as permanent employees, complemented with periodically employed persons with specific expertise and cooperation with the county veterinarians. He again argued that the work should be started on a trial basis for five years. Given that Berglöf argued for the hiring of an agronomist as director, it is probable that he saw Dahlander in this role (*Renforskningsutredningen*, 1960, 31–43).

Due to the slow development of the issue, Dahlander's aim to begin the work to establish the research station already in 1949 was not possible to realize, but he continued to have overall responsibility for the research field, worked actively to finance the building of the station, gathered literature on reindeer husbandry research, and planned for future research. He would, however, never see his vision come to fruition due to his death in January 1951, which also resulted in a temporary interruption of the work.²³ But in November of that year, an organization that would be given the name The Lapp Administration – Reindeer Husbandry Research (*Sw. Lappväsendet – Renforsknigen*) was established, under the leadership of forest officer Folke Skuncke. Three

years later, a research station was opened: the Kuolpavare Station in the Gällivare area (Renforskningsutredningen, 1960, 16-17).

How then, is it possible to explain this sudden surge in interest in reindeer husbandry research in Sweden, where Dahlander got support for his application for a research project and a research station was opened only a few years later? A combination of changes in Sami policy and the expansion of industrial exploitation in the reindeer grazing areas is the main reason behind this altered attitude. After World War II and the formation of the United Nations, it became more and more obvious that the Swedish Sami policy would have to change. It was not possible to uphold a minority policy based on a paternalistic view and subordination of the Sami. However, Sami policy maintained its focus on reindeer husbandry, and the support and protection of the industry would come to be based on the argument that reindeer herders were the main bearers of Sami culture. But the conditions for reindeer husbandry had changed, not least through the expansion of forestry and the increased tempo of hydroelectric power development during the 1940s and 1950s on the reindeer grazing lands. To maintain reindeer husbandry under these conditions, it was considered necessary to modernize and rationalize the industry, and to improve the effectiveness of the use of remaining grazing lands. This led to a rather sudden and complete reversal of Sami policy during the 1950s and 1960s, where the herders and their industry were expected to transition from the traditional to the modern in record time. Reindeer husbandry research was considered to be an important tool in this shift (Lantto, 2011).

From a national to a Nordic project

Skuncke regarded reindeer husbandry as an important industry, both because it was the only one that could use certain geographical areas

and types of vegetation and because of its social and cultural function for the Sami (Skuncke, 1953a, 3).²⁴ He started his work as director of the new research organization by presenting a three-year plan for the work, which was based on the 1949 proposal by Berglöf. It contained a number of basic examinations concerning measuring reindeer, herd composition, and grazing lands, which should be seen as preparatory work until the staff could be expanded to include more specialists.²⁵ Within a couple of years, this had crystallized into four main areas on which Skuncke wished to focus: developing guiding principles for breeding selections, examining grazing conditions (which also included experiments to develop supplemental reindeer forage), developing methods to combat reindeer diseases and harmful parasites, and finally improving the marketing and sale of reindeer products through improved methods for slaughter and castration. The research would be aimed both at generating results that could lead to changed administrative practices, and at developing advice and guidelines for improvements in the handling of the reindeer that could be distributed to the herders (Skuncke, 1953a, 16-18; 1953b; 1957, 231-233; Renforskningsutredningen, 1960, 16-17). The goal was to “promote the greatest possible economical profitability in reindeer husbandry”, without “unduly encroaching on other important industries” (Skuncke 1953b, 2).

The opening of the Kuolpavare Station in 1954 created a firmer base for the organization, but Skuncke was still the only researcher who was employed full-time. This made it difficult to reach the ambitious goals; during the initial years, very little research was conducted and only one pamphlet with advice to the herders, concerning slaughtering methods (Enequist, 1953), was produced. To develop the operation further, it was necessary to recruit more researchers, not least with veterinary competence. Skuncke could now count on strong

support for his work from the regional authorities in all three counties. The earlier doubts expressed in Västerbotten and Jämtland had evaporated when facing the necessity of modernizing and rationalizing reindeer husbandry in order to promote a more effective use of the continually shrinking grazing lands. This support was apparent when, in 1953, Skuncke applied for funding to hire a veterinarian. In a joint letter to the government, the three CABs argued that such a strengthening of the organization was necessary – not least because reindeer husbandry was the only industry based on domesticated animals that lacked access to specially trained veterinarians – and gave their full support to the proposal.²⁶

In 1955, veterinarian Magnus Nordkvist, who would become one of the most important persons in developing reindeer husbandry research in Sweden during the following decades, was hired (Rehbinder *et al.*, 1997). His hiring made it possible to start working in earnest with some of the key areas, work that was carried out in close cooperation with the Veterinary Institute – Nordkvist's formal employer. During the following years, a number of studies were published, and pamphlets containing guidelines for the herders were also distributed, covering areas such as castration, reindeer diseases and experiments with supplemental reindeer forage (Nordkvist, 1956a; 1956b; 1960; Renforskningsutredningen, 1960, 17-18; Lappväsendet – Renforskningen, 1962; 1963; Kungl. Lantbruksstyrelsen, 1968). The work was now carried out in dialogue and cooperation with the herders. Even though it is unclear how this work was viewed among the herders, reactions from the National Union of Swedish Sami (*Sw: Svenska Samernas Riksförbund, SSR*) – formed in 1950 – and in the Sami newspaper The Sami Peoples Own Newspaper/The Sami People (*Sw: Samefolkets Egen Tidning/Samefolket*) were mostly positive (Lantto, 2003, 159). With the inclusion of Nordkvist in the

work of the organization, Skuncke largely turned his focus to trying to develop a method to value reindeer grazing land. This was to be used in connection with estimating financial compensation in cases of hydroelectric power development, but also in discussions between reindeer husbandry and forestry (Skuncke, 1958; 1963; 1964).

Gradually, reindeer husbandry research gained a more prominent position, and was viewed as a central element in the adjustment of Sami policy. Administrative changes were to proceed parallel to, and be supported by, an increased investment in scientific research aimed at improving the industry. Skuncke's goal for the work, quoted above, indicates the importance of this research. It was the adaptation of reindeer husbandry to other industries that was stressed, and in this process it was vital that the shrinking grazing lands could be used more effectively. Reindeer husbandry research was expected to provide some of the tools necessary for this transition from the traditional to the modern. The fact that the state-owned hydroelectric company Vattenfall in 1958 decided to invest 750 000 SEK on a research station of their own – placed on land used by the forest Sami reindeer herding community Serri in Norrbotten – to improve the profitability of reindeer husbandry, is a clear indication of how important this research was considered to be (Renforskningsutredningen, 1960, 19-20).

The significance of the work was also illustrated when a government committee was appointed to evaluate the reindeer husbandry research in 1958, a mere decade after Dahlander's original proposal to establish a research station. The committee presented its report in 1960, in which it emphasized the important role played by the relatively newly established research field in improving the profitability and productivity of reindeer husbandry. To continue this positive development, the committee suggested that the work be intensified and mainly

aimed at areas that could give a fast short-term return, and that the organization become more structured – a structure within which the separate Serri Station established by Vattenfall also should be included (Renforskningsutredningen, 1960). In a government proposition in 1962 on reindeer husbandry, the research issue was included, and most of the proposals from the committee received support. Overall responsibility for reindeer husbandry research was given to the National Board of Agriculture (NBA), which through the same proposition was also given a coordinating role for the implementation of Sami policy nationally. The work was to be carried out in cooperation with the Veterinary Institute and the Swedish Agricultural College (later the University of Agricultural Sciences). A special board consisting of experts, The Reindeer Husbandry Research Board, was formed to assist and advise the NBA on research matters (Proposition, 1962, 13-14, 44-51, 63-64; Kungl. Lantbruksstyrelsen, 1967b, 11-12).

The work became centralized around the Kuolpavare Station, while the Serri Station was closed down. The scientific leader of the experiments at the later station, agronomist Sven Persson, who was employed by the Swedish Agricultural College, would be the first to have the same position within the new organization, which now became known as the State Reindeer Husbandry Research (*Sw: Statens renforskning*). During the 1960s, some work was also done at the Norrland Agricultural Experimental Facility in Röbbäck, outside Umeå. The research which would have the most significant short-term impact was the development of supplemental reindeer forage, which could be used during harsh winters. Experiments had begun during the 1950s, but up until the mid-1960s, there had only been limited trials with different varieties of forage, and there were problems in using them in the field (Kungl. Lantbruksstyrelsen, 1966b; 1966c;

1967a; 1967b, 12-14; 1971, 75-82; 1964 års rennäringsakkunniga, 1968, 2). These experiments, however, were seen as the first steps toward “a more stable reindeer husbandry, which is less dependent on the whims of nature than reindeer husbandry today” (Kungl. Lantbruksstyrelsen, 1966b, 28).

This statement would soon be put to the test, as the industry struggled under very adverse weather conditions during the winter of 1966/67. This became the first real trial of the work to develop supplemental reindeer forage, and according to the LA in Norrbotten the result was very positive. The loss of reindeer in the county was estimated at 6-8 percent, which was considered to be a very favorable and encouraging outcome under the circumstances. The Lapp Bailiffs argued that without the supplementary forage being distributed to the reindeer, the result could very well have been as catastrophic as during the difficult winters in the mid-1930s, when around 50 percent of all reindeer had died. This first large-scale field test also provided many valuable insights for future work (1964 års rennäringsakkunniga, 1968, 2; Kungl. Lantbruksstyrelsen, 1971, 83-86).²⁷ In Jämtland, the usage of supplemental reindeer forage during difficult winters became a more common practice from the mid-1960s.²⁸

In 1966, the NBA argued that intensified research on reindeer husbandry, which was the goal of the government proposal in 1962, had not been possible to realize; the funding had e.g. been too limited and it had been difficult to interest new qualified researchers in working in this scientific field. To remedy these problems, the NBA proposed some organizational changes. As a result of the initiative, a government committee, the 1964 Reindeer Husbandry Experts which was working on a proposal for new legislation concerning reindeer husbandry, was charged with the task of evaluating the State Reindeer Husbandry Research. Like its predecessor, the expert group wanted

the work to be focused on issues that would result in fast, short-term returns. This basically meant that the work should continue as it had, but with a further strengthening of the organization and intensification of the work. The NBA would continue to hold the overall responsibility for the research, but the Reindeer Husbandry Research Board would be replaced with a new board, called the Reindeer Board, which would advise the NBA both on research issues and on reindeer husbandry in general. These proposals were largely realized through a government proposition in 1971, which resulted in the creation of permanent positions at the Veterinary Institute (a state veterinarian in reindeer diseases) and the Swedish Agricultural College (a state agronomist in reindeer husbandry) focused on reindeer husbandry research (Kungl. Lantbruksstyrelsen, 1966a; 1964 års rennärings-sakkunniga, 1968; Proposition, 1971, 94-97, 144-145; Skogs- och jordbrukets forskningsråd, 1988, 21).

Reindeer husbandry research was also one area included in organized cooperation between Norway, Sweden and Finland during the 1960s. Cooperation around reindeer husbandry and Sami issues had been discussed by the Nordic Council both in 1956 and 1959, but had not led to any concrete measures to implement the suggestions. During the discussions, reindeer husbandry research was often singled out as a specifically important field for this collaboration. In 1962, the Nordic Council again decided to initiate cooperation on these issues, and this time the initiative was successful through the formation of the Nordic Council for Cooperation on Sami and Reindeer Husbandry Issues in 1965. As areas of interest, the new organization, e.g., highlighted Sami language, school issues, media and culture, reindeer husbandry research as well as rationalization of reindeer husbandry (Årenden som, 1957, 94-100; Spörsmål av, 1959; Spörsmål av, 1960).²⁹ The CABs were very positive to the

initiative and saw a central role for reindeer husbandry research in the work to develop the industry and increase its profitability.³⁰

Right from the start, the Council stressed the importance of cooperation in the field of reindeer husbandry research. In an attempt to maximize the effects of the collaboration, the Council recommended that the responsibility for different research areas be distributed between the countries. Sweden was, among other things, charged with developing supplemental reindeer forage and combating reindeer diseases and parasites, issues that had been central since the start of reindeer husbandry research in the country. Norway was to focus on issues surrounding the composition of the reindeer herds, while Finland would work on breeding selections. In 1969, the Council decided to assess this recommendation, and the following year it decided to leave it up to each country to evaluate and prioritize how it wanted to focus its reindeer husbandry research resources (1964 års rennärings-sakkunniga, 1968, 3-4; Kungl. Lantbruksstyrelsen, 1967b, 14; 1971, 11-30, 109-111).³¹ In 1977, discussions were again initiated concerning deepened research cooperation, and three years later, the Nordic Council for Reindeer Husbandry Research (NOR) was founded to coordinate research and facilitate contacts between researchers in the three countries. The name was originally the Nordic Council for Reindeer Research, but was changed to emphasize that both natural and social sciences were included. The organization was also given responsibility for starting a journal on reindeer husbandry research, which was realized in 1981 through the publication of the first issue of *Rangifer* (Skogs- och jordbrukets forskningsråd, 1988, 18-19; Sara, 1999, 16-17). Both the organization and the journal are still active today, and NOR regularly arrange Nordic reindeer husbandry conferences.

Concluding remarks

During the first half of the 20th century, reindeer husbandry research received limited attention in Sweden. The research being done was initiated by commissions and authorities, and was almost exclusively focused on specific issues connected to the Swedish-Norwegian negotiations concerning the trans-border reindeer husbandry or disease outbreaks, and were not aimed at establishing or developing a scientific field.

There were individuals who were exceptions from this rule, and none more prominent than Arvid Bergman at the National Veterinary Institute, who broke the mold and showed a genuine personal interest in the field and studied several different issues. It is indicative that there are very few notable studies for more than two decades after his death in 1923. The poor interest in reindeer husbandry research during this period is perhaps best described by Magnus Nordkvist: "In earlier times it was generally more or less necessary to have an outbreak of diseases of epidemic proportions for the responsible authorities to awaken and decide to investigate" (Kungl. Lantbruksstyrelsen, 1971, 53).

A change started in 1947 with Gösta Dahlander's application for funding of his research project on reindeer and muskoxen. In due time, with changes in both Sami policy and the external conditions under which reindeer husbandry was carried out and inspired by reindeer husbandry research in North America, this first seed planted by Dahlander would grow quickly and develop into a scientific field. It is probable that the attempts to introduce reindeer husbandry in Canada, and the connection between these attempts and the ambition to domesticate the muskoxen, led Dahlander to his initial application for research funding. He had studied the possibility of introducing muskoxen in Sweden, and had also carried out some experiments on reindeer

breeding. When he proposed the establishment of a reindeer husbandry research station one year later, he explicitly wanted to model this endeavour after the successful research station in Alaska. Where Sweden more or less seemed to have taken reindeer husbandry for granted the newness of the industry and the many uncertainties surrounding the experiments and how to make them successful made the North Americans more inclined to put resources into research to secure the best possible conditions for the industry. This focus and dedication was a very suitable model to point to when trying to build an initial research platform in Sweden.

Within a year after Dahlander's death in 1951, Folke Skuncke was able to succeed him and continue his work to establish a reindeer husbandry research organization. Three years later Skuncke oversaw the opening of a research station, as well as the hiring of veterinarian Magnus Nordkvist the following year. With Skuncke at the helm, increased profitability in reindeer husbandry while adapting it to other industries' encroachment of the grazing lands was explicitly made the primary goal of the research. He was successful in building the organization but based on the studied material it is difficult to say whether the research had a major impact in this work. One area where the research obviously had a major impact was in the development of supplemental reindeer forage, which in the long run would make the industry less dependent on weather conditions during harsh winters. The post-World War II era also saw an emerging relationship between researchers and herders, and the work was increasingly both developed and carried out in cooperation between them.

The development of the research field was remarkable. Within two decades, two reindeer husbandry research stations had been in operation and field-work was also being carried out at other locations. Two government committees had evaluated the work, it had a stable

yearly state financing, and there was growing Nordic cooperation in the field which today is represented by the NOR organization and the journal *Rangifer*. This dynamic expansion was something that Dahlander himself probably could not have envisioned, when he made his first inroads toward establishing reindeer husbandry research in Sweden.

Acknowledgements

The author would like to thank Jon Moen at Umeå University, Erik Ågren at the Swedish Veterinary Institute, Terje Josefson at the Norwegian Veterinary Institute, the anonymous referees, and the editor of *Rangifer* for their comments which have helped improve the article.

Notes

- ¹ Gösta Dahlander till Jordbrukets forskningsråd, 19 August 1948. RSAH, NLLA, D I b:33.
- ² Up until the 1960s, the Sami in Sweden were officially referred to as Lapps, an originally Finnish term that they themselves perceived as derogatory, but this has been changed to the endonym Sami. The term Sami will be used consistently throughout the article, except for in some quotations and expressions in which the old term Lapp occurs.
- ³ Reindeer plague is considered to have been caused by bacterial infection *Clostridium* sp. The disease would be called "clostridiosis" but the exact bacteria have not been identified.
- ⁴ Reindeer are parasitized by the larvae of two bot fly (Diptera: Oestridae) species; the warble fly *Hypoderma* (= *Oedemagena*) *tarandi* (L.) and the nose bot fly *Cephenemyia trompe* (Modeer). Linnaeus (Linné) described the life cycle of the warble fly already in 1732 during a journey in Luleå Lappmark (Luleå Sami area).
- ⁵ Arvid M Bergman till lappfogde Holm, 2 April 1918, 8 March 1919. RSAH, LNNA, E III:2; Nomadskolinpektör Erik Bergström till lappfogde Staaff, 28 February 1928. RSAÖ, LJA, E II:13; Th. A Helleborg till lappfogde Staaff, 13 March 1928. RSAÖ, LJA, E II:13; *Samefolkets Egen Tidning* 1927:2, 12-13; 1927:4, 31.
- ⁶ Foot root, necrobacillosis, caused by the bacterium *Fusobacterium necrophorum*.
- ⁷ Årsberättelse 1909 av lappfogden i Västerbottens län, Peder Holm, 31 January 1910. NAS, CA, konseljakter 18/3 1910, nr 47; Årsberättelse 1910 av lappfogden

i Västerbottens län, Peder Holm, 31 January 1911. NAS, CA, konseljakter 17/2 1911, nr 53.

- ⁸ There is no single specific cause for karatitis (keratoconjunctivitis) in reindeer.
- ⁹ Called "Rensjuka" in layman terms at that time, caused by *Pasteurella* bacteria.
- ¹⁰ Foot-and-mouth disease is a virus caused infection.
- ¹¹ Årsberättelse 1899 av lappfogden i Jämtland, Axel Frändén, 20 January 1900. RSAÖ, JLLkaA, E XX:1; Årsberättelse 1900 av lappfogden i Jämtland, Axel Frändén, 12 January 1901. RSAÖ, LJA, B II:1; Årsberättelse 1901 av lappfogden i Jämtland, Axel Frändén, 21 January 1902. NAS, CA, konseljakter 14/2 1902, nr 22; Landshövdingen i Jämtland Knut Sparre till lappfogde Frändén, 23 February 1902. RSAÖ, LJA, E II:2; Länsstyrelsen i Jämtland till lappfogde Frändén, 14 April 1902. RSAÖ, LJA, E II:2; T Hedlund till lappfogde Frändén, 22 November 1902, 28 November 1902. RSAÖ, LJA, E II:2; Årsberättelse 1902 av lappfogden i Jämtland, Axel Frändén, 15 January 1903. RSAÖ, LJA, B II:1; Länsstyrelsen i Jämtland till lappfogde Frändén, 7 February 1903. RSAÖ, LJA, E II:3; Årsberättelse 1903 av lappfogden i Jämtland, Axel Frändén, 15 January 1904. NAS, CA, konseljakter 12/2 1904, nr 17.
- ¹² For an example of recommendations issued by the Medical Board concerning the handling of specific diseases, see: Kungl. Medicinalstyrelsens cirkulär om den hos renar förekommande sjukdomen "klöfröta" eller "kluppe" och dess behandling, 24 Mai 1909. RSAÖ, LJA, F III:1.
- ¹³ Lappfogde Hilding Johansson till länsstyrelsen i Västerbotten, 28 October 1948. RSAH, LVA, B I:31. Johansson does not specify which year, but he had been Bailiff since 1936.
- ¹⁴ Kan den nordöstgrönländska fåroven (*Ovibos moschatus wardi*) få någon praktisk betydelse för Nordsvenska förhållanden?, av Gösta Dahlander, probably 1947. NAS, JFR, F I a:8; Gösta Dahlander till Jordbrukets Forskningsråd, 3 March 1947, 13 March 1947. RSAH, LNÖA, E:10; Protokoll, hållet vid sammanträde med Jordbrukets forskningsråd, 20 March 1947. NAS, JFR, A I:1; Curriculum vitae för Agronom Gösta Dahlander, 15 October 1947. NAS, JFR, F I a:8.
- ¹⁵ Gösta Dahlander till Jordbrukets Forskningsråd, 3 March 1947, 13 March 1947. RSAH, LNÖA, E:10; Gösta Dahlander till Jordbrukets forskningsråd, 10 May 1947. NAS, JFR, F I a:8. The focus on reindeer was also necessary because of negative response to his

- proposal to introduce muskox. See: Intendent Ernst Manker till Jordbrukets forskningsråd, 16 April 1947. NAS, JFR, F I a:8; Lennart Berlöf till jordbruksministern, 20 May 1947. NAS, YK 1290:2.
- 16 Protokoll, hållet vid sammanträde med Jordbrukets forskningsråd, 20 March 1947, 30 May 1947, 5 November 1947. NAS, JFR, A I:1; Protokoll, hållet vid sammanträde med arbetsutskottet inom Jordbrukets forskningsråd, 16 May 1947, 25 October 1947. NAS, JFR, A I:1.
 - 17 Rapport över utfört fåltarbete på renskötselns område sommaren 1947, av Gösta Dahlander, no date. NAS, JFR, F I a:8; P.M. över fortsättningen av renavelsförsöken i Norrbottens läns lappmarker 1948/49, av Gösta Dahlander, 18 November 1947. RSAH, NLLA, D I b:33; Rapport över hittillsvarande förlopp av den ras- och avelsbiologiska undersökningen av fjäll- och skogsrenstammarna, av Gösta Dahlander, no date. NAS, JFR, F I a:8; Gösta Dahlander till Jordbrukets forskningsråd, 19 August 1948. RSAH, NLLA, D I b:33; Översikt över de med anslag av Jordbrukets Forskningsråd bedrivna renundersökningarna för tiden 1/11 1947 – 30/6 1947, av Gösta Dahlander, 7 September 1948. NAS, JFR, F I a:8.
 - 18 Lappfogde Erik Hedbäck till Jordbrukets Forskningsråd, 13 May 1947. RSAH, LNNA, B I:17; P. M. angående agronomen G. Dahlanders forskning på renskötselns område, 7 October 1947. RSAH, NLLA, G XXVII:9; Landssekreterare Ragnar Sundberg till förste kanslisekreterare Allan Tigerschiöld, 31 October 1947; RSAH, NLLA, G XXVII:9; Länsstyrelsen i Norrbotten till Jordbrukets forskningsråd, 6 April 1948. RSAH, NLLA, G XXVII:9; Lappfogdarna Erik Hedbäck och Erik Malmström till länsstyrelsen i Norrbotten, 16 June 1948. RSAH, LNNA, B I:18; Lappfogdarna Erik Hedbäck och Bror Ejdemo till länsstyrelsen i Norrbotten, 7 October 1948. RSAH, LNNA, B I:18; Länsstyrelsen i Norrbotten till Jordbrukets forskningsråd, 14 October 1948. RSAH, LNNA, E III:18; Lappfogde Erik Hedbäck till lappfogde Hilding Johansson, 9 October 1948 (quote), 19 November 1948, 8 December 1948. RSAH, LVA, E I:37.
 - 19 Lennart Berglöf till Jordbrukets Forskningsråd, 14 May 1947. NAS, YK 1290:2; Lennart Berglöf till Jordbrukets Forskningsråd, 9 November 1948. NAS, YK 1290:3.
 - 20 Lappfogde Hilding Johansson till Jordbrukets Forskningsråd, 3 June 1947. NAS, JFR, F I a:8; Lappfogde Hilding Johansson till länsstyrelsen i Västerbotten, 28 October 1948. RSAH, LVA, B I:31; Länsstyrelsen i Västerbotten till jordbrukets forskningsråd, 15 November 1948. RSAH, LVA, E I:37.
 - 21 Lappfogde Gardham till Jordbrukets forskningsråd, 17 April 1947. NAS, YK 1290:2; Lappfogde Gardham till länsstyrelsen i Jämtland, 9 October 1948. RSAÖ, LJA, B I:18.
 - 22 Protokoll, hållet vid sammanträde med Jordbrukets forskningsråd, 18 November 1948. NAS, JFR, A I:1
 - 23 The folder: "1948-1950 Renforskning". NAS, JFR, F V:1; Lappfogde Hedbäck till länsstyrelsen i Norrbotten, 22 February 1952. RSAH, NLLA, D I b:38; Diskussionspromemoria från renforskningsutredningen, av Lars Calleberg, 22 January 1960. RSAH, LNNA, E:9.
 - 24 Om förutsättningarna för och behovet av veterinär sakkunskap för höjande av renskötselns avkastning, av Folke Skuncke, 13 December 1953, 1. RSAÖ, LJA, E II:18.
 - 25 Plan över kostnadsberäkning för fortsatt forsknings- och försöksverksamhet på renskötselns område under en första 3-årsperiod, av Folke Skuncke, 29 November 1951. RSAH, NLLA, D I b:38; Om förutsättningarna för och behovet av veterinär sakkunskap för höjande av renskötselns avkastning, av Folke Skuncke, 13 December 1953, 1-2. RSAÖ, LJA, E II:18.
 - 26 Kort sammanställning över Renforskningens hittills utförda arbeten och närmaste planer, av Folke Skuncke, 5 December 1953. RSAÖ, LJA, E II:18; Om förutsättningarna för och behovet av veterinär sakkunskap för höjande av renskötselns avkastning, av Folke Skuncke, 13 December 1953. RSAÖ, LJA, E II:18; Länsstyrelserna i Jämtland, Västerbotten och Norrbotten till regeringen, 30 March 1954. RSAÖ, LJA, E II:18.
 - 27 Förste konsulenterna i Norrbotten till länsstyrelsen i Norrbotten, 11 October 1967. RSAH, LNNA, B I:35.
 - 28 Mappen "Nödfoder för ren 1966-1967". RSAÖ, LJA, F III:1.
 - 29 Protokoll, fört vid Samarbetsorganets för same- och renskötselns frågor första möte, 22 January 1965. RSAÖ, LJA, E II:43.
 - 30 Länsstyrelsen i Västerbotten till jordbruksdepartementet, 19 March 1965. RSAH, LVA, B I:44; Länsstyrelsen i Norrbotten till jordbruksdepartementet, 25 March 1965. RSAH, LNNA, B I:33; Länsstyrelsen i Jämtland till jordbruksdepartementet, 25 March 1965. RSAÖ, LJA, E II:43.

- ³¹ Protokoll, fört vid Samarbetsorganets för same- och renskötselfrågor första möte, 22/1 1965. RSAÖ, LJA, E II:43; Protokoll fört vid överläggningar inom det av Nordiska samarbetsorganet för samespörsmål och renskötselfrågor tillsatta rennäringsskottet, 3-4/10 1966, 7-11. RSAÖ, LJA, E II:51; Protokoll fört vid möte med Samarbetsorganets rennäringsskott, 18/11 1969, 8-18, bilaga 2-3. RSAÖ, LJA, E II:64; Protokoll fört vid Nordiska samarbetsorganet för samespörsmål och renskötselfrågor, 19/11 1969, 6-7. RSAH, LNSA, E:17; Protokoll fört vid möte med Samarbetsorganets rennäringsskott, 14/4 1970, 12-16. RSAH, LNSA, E:17.

Unprinted sources

National Archives Sweden (NAS)

Civildepartementets arkiv (CA)

Konseljakter.

Jordbrukets forskningsråd (JFR)

A I. Protokoll.

F I a. Slutredogörelser och handlingar angående beviljade forskningsanslag.

F V. Handlingar rörande vissa forskningsprojekt.

Yngre kommittéarkivet (YK)

YK 1290. Utredningen angående vissa frågor beträffande lapparna.

Regional State Archive in Härnösand (RSAH)

Lappfogdens i Norrbottens norra distrikt arkiv (LNNA)

B I. Utgående skrivelser.

E III. Övriga inkomna skrivelser.

Lappfogden i Norrbottens södra distrikt arkiv (LNSA)

E. Inkomna skrivelser.

Lappfogden i Norrbottens östra distrikt arkiv (LNÖA)

E. Inkomna handlingar (skrivelser).

Lappfogdens i Västerbottens län arkiv (LVA)

B I. Brevkoncept.

E I. Inkomna skrivelser.

Norrbottens läns landskanslis arkiv (NLLA)

D I b. Ankomna brev i lappärenden.

G XXVII. Handlingar som efterlämnats av landssekreterare Ragnar Sundberg.

Regional State Archives in Östersund (RSAÖ)

Jämtlands läns länsstyrelses landskanslis arkiv (JLLkaA)

E XX. Handlingar angående lappväsendet.

Lappfogdens i Jämtlands län arkiv (LJA)

B I. Brevkoncept.

B II. Årsberättelser.

E II. Inkomna diarieförda skrivelser.

F III. Handlingar angående rennäringen.

Public documents

1964 års rennäringssakkunniga (1968). *Den framtida organisationen för statens renforskning*. Ds Jo 1968:7. Stockholm.

Betänkande rörande åtgärder till skydd för vårt lands natur och naturminnesmärken. Afgifvet af inom Kungl. Jordbruksdepartementet för ändamålet tillkallade sakkunnige. Stockholm: Nordiska bokhandeln, 1907.

Bidrag till Sveriges officiella statistik. H) Kungl. Maj:ts Befallningshafvandes femårsberättelser, Ny följd 9, åren 1896-1900, Jemtlands län.

Bidrag till Sveriges officiella statistik. H) Kungl. Maj:ts Befallningshafvandes femårsberättelser, Ny följd 10, åren 1901-1905, Jämtlands län.

Kungl. Lantbruksstyrelsen (1966a). *Promemoria med förslag rörande den framtida organisationen för statens renforskning*. Ds Jo 1966:13. Stockholm.

Motioner i Andra kammaren N:o 163, 1908.

Proposition N:o 68, 1962.

Proposition N:o 51, 1971.

Protokoll, Andra Kammaren N:o 31, 1913.

Renforskningsutredningen (1960). *Renforskningens organisation*. Luleå: Jordbruksdepartementet.

SFS 1886:38. *Lag, angående de svenska Lapparnes rätt till renbete i Sverige*.

SFS 1898:66. *Lag om de svenska lapparnas rätt till renbete i Sverige*.

SFS 1928:309. *Lag om de svenska lapparnas rätt till renbete i Sverige*.

SOU 1936:23. *Betänkande angående åtgärder för avhjälpan av de inom vissa delar av Norrbottens läns lappmark yppade missförhållanden samt rörande de kostnader som därav kunde föräntledas m.m.* Stockholm, 1936.

Spörsmål av samiskt intresse vid Nordiska rådets 6:e session 1958. Stockholm, 1959.

Spörsmål av samiskt intresse vid Nordiska rådets 7:e session 1959: Samernas rättigheter och samverkan på renskötselns område. Stockholm, 1960.

Ärenden som beröra samerna. Särtryck ur NORDISKA RÅDETS handlingar, 5:te sessionen, Helsingfors 1957. Helsinki, 1957.

Printed sources and literature

Barthel, C. & A. M. Bergman. 1913. *Renmjölk och renost*. Uppsala.

Bergman, A. 1899. Om oestriderna och deras ekonomiska betydelse. – *Entomologisk tidskrift* 20: 133-155.

Bergman, A. 1901. Rennthierpest und Rennthierpestbacillen. – *Zeitschrift für Thiermedizin* 5: 241-283, 326-337.

- Bergman, A. M. 1909. *Om klöfröta och andra med progressiv nekros förlöpande sjukdomar hos ren*. Stockholm: Kungl. Medicinalstyrelsen.
- Bergman, A. M. 1912. *Smittosam hornbinneinflammation, keratitis infectiosa, hos ren*. Uppsala: Statens Veterinärbakteriologiska Anstalt.
- Bergman, A. M. 1917. *Om renens oestrider*. Uppsala: Statens Veterinärbakteriologiska Anstalt.
- Bergman, A. M. 1920. Berättelse över verksamheten vid statens veterinärbakteriologiska anstalt under 1919. – In: Bergman, Arvid M. 1923. *Arbeten*. Uppsala.
- Bergman, A. M. 1921. Berättelse över verksamheten vid statens veterinärbakteriologiska anstalt under 1920 jämte kortfattad tioårsberättelse. – In: Bergman, Arvid M. 1923. *Arbeten*. Uppsala.
- Bergman, A. M. 1923. *Kort översikt av verksamheten vid Statens Veterinärbiologiska Anstalt under dess 12 första år utgiven till tjuguaandra allmänna lanbruksmötet i Göteborg*. Uppsala: Statens Veterinärbakteriologiska Anstalt.
- Bergström, E. & Fries, T. 1909. *Anteckningar till karta öfver renbetesmarkerna ofvan barrskogsgränsen inom Karesuando och Jukkasjärvi norr om Torneträsk*. Bilaga till: Om renarne och deras lefnadsvanor af Einar Lönnberg. Uppsala: Almqvist & Wiksell.
- Brandt, O. 1914. Pasteurellos hos ren. – *Svensk Veterinärtidskrift* 19: 379-397, 434-443.
- Canada. 1922. *Report of the Royal Commission to Investigate the Possibilities of the Reindeer and Musk-Ox Industries in the Arctic and Sub-Arctic Regions of Canada*. Ottawa: F. A. Acland.
- Collinder, B. 1932. *Lapparna - deras kultur och arbetsliv*. Stockholm: Bonniers.
- Diubaldo, R. J. 1978. *Stefansson and the Canadian Arctic*. Montreal: McGill-Queen's University Press.
- Enequist, N. 1953. *Riktig renslakt*. Danderyd: Lappväsendet - Renforskningen.
- Hjärre, A. 1944. *Statens veterinärmedicinska anstalt: Kortfattad redogörelse för dess tillkomst, organisation, verksamhet och nybyggnader*. Stockholm: Statens veterinärmedicinska anstalt.
- Hunt, W. R. 1986. *Stef: A Biography of Vilhjamur Stefansson, Canadian Arctic Explorer*. Vancouver: University of British Columbia Press.
- Kungl. Lantbruksstyrelsen. 1966b. *Rennäringen: Fältutfodringsförsök under år 1965*. Solna: Kungl. Lantbruksstyrelsen.
- Kungl. Lantbruksstyrelsen. 1966c. *Rennäringen: Tillskottsutfodring under ogynnsamma vinterbetesförhållanden*. Solna: Kungl. Lantbruksstyrelsen.
- Kungl. Lantbruksstyrelsen. 1967a. *Rennäringen: Studier av renarnas energibehov*. Solna: Kungl. Lantbruksstyrelsen.
- Kungl. Lantbruksstyrelsen. 1967b. *Rennäringen åren 1962-1966*. Solna: Kungl. Lantbruksstyrelsen.
- Kungl. Lantbruksstyrelsen. 1968. *Rennäringen: Bekämpningsförsök mot korm och svalgbroms*. Solna: Kungl. Lantbruksstyrelsen.
- Kungl. Lantbruksstyrelsen. 1971. *Samnordisk renforskningskonferens. Gällivare 1969*. Solna: Kungl. Lantbruksstyrelsen.
- Lantto, P. 2000a. 1930- och 1940-talets svenska lapputredningar och samiska reaktioner: En komparativ analys". – In: P. Sköld & P. Lantto (eds.). *Den komplexa kontinenten. Staterna på Nordkalotten och samerna i ett historiskt perspektiv*, pp. 216-260. Umeå: Institutionen för historiska studier, Umeå universitet..
- Lantto, P. 2000b. *Tiden börjar på nytt. En analys av samernas etnopolitiska mobilisering i Sverige 1900-1950*. Umeå: Kulturgräns norr.
- Lantto, P. 2003. *Att göra sin stämna hörd: Svenska Samernas Riksförbund, samerörelsen och svensk samepolitik 1950-1962*. Umeå: Kulturgräns norr.
- Lantto, P. 2011. *Lappväsendet: Tillämpningen av svensk samepolitik 1885-1971*. Umeå: Centrum för Samisk forskning, Umeå universitet. Under publication.
- Lappväsendet–Renforskningen. *Meddelande 6*. Danderyd 1962.
- Lappväsendet–Renforskningen. *Meddelande 7*. Stockholm 1963.
- Lundgren, J. 1897. Renpesten i Lappland. Rapport till Kongl. Medicinalstyrelsen. – *Svensk Veterinärtidskrift* 2: 269-273.
- Lundgren, J. 1898a. Die Rennthierpest. – *Zeitschrift für Thiermedizin* 2: 401-417.
- Lundgren, J. 1898b. Renpesten i Lappland. Rapport till Kongl. Medicinalstyrelsen. Forts. – *Svensk Veterinärtidskrift* 3: 1-12.
- Lönnberg, E. 1909. *Om renarne och deras lefnadsvanor*. Bilaga till "Förhandlingarne inför skiljedomstolen af 1909 i renbetesfrågan, afdelning I, svensk inlaga n: 3". Uppsala: Almqvist & Wiksell.
- Magnusson, H. 1913. *Om pasteurellos hos ren jämte ett bidrag till kännedomen om pasteurellans biologiska egenskaper*. Uppsala: Statens Veterinärbiologiska Anstalt.
- Magnusson, H. 1927. *Är renen mottaglig för mul- och klövsjuka?* Uppsala: Statens Veterinärbiologiska Anstalt.
- Manker, E. 1934. *Rajden går: Skogslapparna i Vittangi skildrade i ord och bild*. Stockholm: Hökerberg.
- Mörkenstam, U. 1999. *Om "Lapparnes privilegier": Föreställningar om samiskhet i svensk samepolitik 1883-1997*. Stockholm: Statsvetenskapliga institutionen, Stockholms universitet.
- Nordkvist, M. 1956a. *Om renens fodermätning: En kort orientering*. Lappväsendet - Renforskningen småskrift 2. Danderyd: Lappväsendet - Renforskningen.

- Nordkvist, M. 1956b. *Om tångkastration av ren*. Lappväsendet - Renforskningen småskrift 3. Danderyd: Lappväsendet – Renforskningen.
- Nordkvist, M. 1960. *Renens sjukdomar: Kort översikt*. Lappväsendet - Renforskningen småskrift 4. Danderyd: Lappväsendet – Renforskningen.
- Porsild, A. E. 1929. *Reindeer Grazing in Northwest Canada: Report of an Investigation of Pastoral Possibilities in the Area from the Alaska-Yukon Boundary to Coppermine River*. Ottawa: Department of the Interior, North West Territories and Yukon Branch.
- ”Protokoll hållet vid Svenska veterinärläkareföreningens extra möte å veterinärhögskolan i Stockholm lördagen den 5 mars 1927”. 1927. – *Svensk Veterinärtidskrift* 32: 261-344.
- Rehbinder, C., Bær, L. A., Westerling, B., & Skjenneberg, S. 1997. Magnus Nordkvist: Sweden's first reindeer veterinary surgeon. – *Rangifer* 173: 103-104.
- Samefolkets Egen Tidning. 1927.
- Sara, O. K. 1999. Utviklingstrekk – samarbeide over landegrensene. – In: R. E. Haugerud (ed.). Konferanserapport. Den 10. nordiske forskningskonferansen om rein og reindrift. Guovdageaidnu, Norge, 13.-15. mars 1998. – *Rangifer* Report No. 3, 1999: 13-21.
- Skogs- och jordbrukets forskningsråd. 1988. *Renskriften – SJFR:s rapport om den framtida renforskningen*. Stockholm: Skogs- och jordbrukets forskningsråd.
- Skuncke, F. 1953a. *Om möjligheterna att förbättra metoderna för renskötseln*. Danderyd: Lappväsendet – Renforskningen.
- Skuncke, F. 1953b. *Renforskningens mål och medel*. Danderyd: Lappväsendet – Renforskningen.
- Skuncke, F. 1957. Renforskningsprogrammet i Sverige. – *Sámiid diliit: Föredrag vid Den nordiska samekonferensen, Jokkmokk, 1953*. K. Nickul, A. Nesheim & I. Ruong (eds.). Oslo, pp. 231-237.
- Skuncke, F. 1958. *Renbeten och deras gradering*. Uppsala: Lappväsendet – Renforskningen.
- Skuncke, F. 1963. *Renbetet, marklavarna och skogsbruket*. Stockholm: Lappväsendet – Renforskningen.
- Skuncke, F. 1964. *Rennäringens ekonomi. Skötsel, avkastning och markvärden*. Uppsala: Lappväsendet – Renforskningen.
- Svensk Veterinärtidskrift. 1909.
- Svensk Veterinärtidskrift. 1913.
- Waiser, W. A. 1989. Canada Ox, Ovibos, Woolox... Anything but Musk-Ox. – In: K. S. Coates & W. R. Morrison (eds.). *For Purposes of Dominion: Essays in Honour of Morris Zaslow*. North York: Captus Press, pp. 189-199.
- Wiklund, K. B. 1903. Lapparna, deras lif och kultur: Föredrag vid Svenska Turistföreningens årsmöte den 18 februari 1902. – *Svenska Turistföreningens Årsskrift* 1903: 15-44.
- Wiklund, K. B. 1929. Lapparna och stora världen. – *Svenska Turistföreningens Årsbok* 1929: 89-112.

*Preliminary manuscript received 17 August, 2011
manuscript received 15 September, 2011
revision accepted 21 October, 2011*

Etableringen av ett vetenskapligt fält: Renforskningens historia i Sverige 1900–1970

Abstract in Swedish / Sammanfattning: Artikeln studerar renforskningens utveckling som ett vetenskapligt fält inom naturvetenskaperna i Sverige under perioden 1900–1970. Fram till efter andra världskriget var det främst humanister och samhällsvetare som bedrev forskning rörande renskötseln, medan näringen ägnades väldigt liten uppmärksamhet inom naturvetenskaperna. Från slutet av 1940-talet började detta förändras genom att flera vetenskapliga discipliner blev involverade, och under de följande decennierna etablerades renforskningen som ett vetenskapligt fält inom naturvetenskaperna. Artikeln kopplar renforskningen till samepolitikens utveckling i Sverige och undersöker de forskningsinitiativ som togs inom området under första halvan av 1900-talet: varifrån initiativen kom liksom varför studierna inte bidrog till att forskningsfältet etablerades tidigare. Därefter undersöks utvecklingen efter andra världskriget, med fokus på att förklara varför renforskningen så snabbt etablerades och studera fältets utveckling fram till omkring 1970, både nationellt och som en del i ett nordiskt samarbete.

