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A societal history of potato knowledge in Sweden c. 1650–1800

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ABSTRACT

This article concerns the societal history of potato knowledge in early modern Sweden. Focusing on the communication process, it analyses when, how, why, and which type of knowledge of the potato was communicated and ultimately experienced a societal breakthrough in early modern Sweden. The article shows that knowledge of the potato was transformed as it crossed social, spatial, and media boundaries. The breakthrough – which only came in 1749–50 – was not the result of a linear, cumulative diffusion process dating from the initial knowledge intervention in the 1650s; instead, it was the result of a particular knowledge network, long devoted to promoting the potato, finally gaining influence over important knowledge institutions, thus making mass communication possible. In the 1720s and 1730s, this network had redefined the potato in the context of agriculture and especially in relation to the phenomenon of famine and crop failure. In the subsequent period, this revised knowledge became increasingly relevant to Swedish society, as the elite became ever more concerned with food security, population policy, and agricultural and fiscal reforms. Finally, following a severe crop failure in the 1740s, political support for a broad knowledge intervention was secured.

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Introduction

In the early nineteenth century, the potato became an important staple crop in Sweden. This transformation proved highly important to Swedish society, as it helped secure the rapid population growth then underway. However, for this change to come about, ordinary men and women first had to learn about the new crop and the great benefits it offered. This article explores this communication process and, in particular, the moment when a specific set of knowledge of the potato was first successfully and widely communicated to the public and established as authoritative in society at large.

Somewhat surprisingly, this historical moment – in the following characterized as a societal knowledge breakthrough – has received little attention in the literature on the history of the potato. Instead, the Swedish historiography has focused on origins – first and foremost the figure of Jonas Alströmer, who in 1727 published a small book promoting the potato in Sweden – the most innovative texts and authors, spatial dissemination, the periods when particularly numerous texts were published, and the moment when the practice of growing potatoes had its societal breakthrough in Sweden.¹

This article adopts a different approach. Following a strong trend among historians working on the multifaceted subject of knowledge, it refutes the simple model of knowledge diffusion, the clear distinction between the production and the communication of knowledge, and the longstanding obsession with novelty.² At the same time, these theoretical premises (e.g. that knowledge is continuously re-made as it circulates between different actors and crosses social, spatial, and media boundaries) should not be taken at face value, but instead studied empirically. Thus, this article asks: What was the impact of the original potato knowledge, and to what extent did this knowledge transform as it was communicated? Was this communication process intrinsically multi-directional, or should it rather be considered a process of one-way dissemination?

In addition, recognizing that the concept of circulation might imply a somewhat smooth movement of knowledge, this article, on the contrary, stresses the many twists and turns, stops and starts, of the knowledge in transfer. Communicating knowledge oftentimes requires hard work, and it is rarely unopposed. Thus, the process of communicating knowledge requires a careful analysis of power relations and looking into not only the actors and factors facilitating this, but also the various obstacles and barriers making the knowledge slow down or even stall.³

Furthermore, in contrast to much previous knowledge historical research, this article focuses on knowledge as it – in the form of textual information and the result of a process of negotiation and validation – began to move socially, away from learned communities, presumed centres of knowledge, more narrow social strata, and the original sites of knowledge-production, towards society at large. Echoing an old ambition in social history, and paraphrasing James Secord, this article thus asks when, how, why, and which type of knowledge of the potato ceased being the exclusive property of single individuals and groups to become part of the accepted understanding of much wider groups of people.⁴ By paying close attention to economical, medial, political, social, and cultural contexts alike, the aim is to map and analyse the various movements of knowledge of the potato in early modern Sweden, a process eventually culminating in a societal knowledge breakthrough. More generally, this article encourages historians to take more of an interest in knowledge of great and immediate relevance to past societies.

The first knowledge intervention: the seventeenth century

Knowledge of the potato first started to spread among Europeans in the 1530s. In Sweden, the potato was first mentioned in print in 1658, when the botanist and professor of medicine Olof Rudbeck (1630–1702) published a Latin text listing the plants in Uppsala University's botanical garden, which he had recently founded. In this text, Rudbeck claimed to have been the first Swede to introduce the plant in Sweden: in 1653, the Swedish Chancellor of the Realm, Axel Oxenstierna (1583–1654), had instructed him to acquire plants from the Netherlands, and to improve his botanical knowledge, during an imminent visit to Leiden and the botanical garden there, with the ultimate purpose of establishing a botanical garden in Uppsala. Oxenstierna and Queen Christina (1626–89) together provided the money, eventually covering the import of some 800 'fruits, seeds, bulbs and roots', which all but certainly included potatoes. Rudbeck classified the plant, *Solanum tuberosum*, as both an ornamental and edible plant. Through Rudbeck, the potato found its way from Uppsala to a few nearby country houses of members of the

Swedish Council of the Realm, including Magnus Gabriel De la Gardie (1622–86) – who was chancellor of Uppsala University and Rudbeck’s new benefactor following the death of Oxenstierna.⁵

It was in this aristocratic environment that we first encounter the potato in a printed text written in Swedish: in 1664, in a collection of recipes published by one Romble Salé, a French chef in the service of the nobleman Gustaf Soop (1624–79). The cookbook (224 pages, 8vo) was essentially a translated compilation of the highly influential books on the new French cuisine by François Pierre de la Varenne (1615–78), which Salé thus introduced to Swedish readers for the first time. In it, Salé very briefly described for the ‘ladies of Sweden’ how ‘jordhpäror’ – literally, earth pears – were cooked in his native country.⁶ The same Swedish noun had been used in 1662 by Schering Rosenhane (1609–63) – he too a member of the Council of the Realm, and known for his learning – in his never published manuscript on the noble household. In the section on gardening (and not, mind, the section on farming) he gave what is thought to have been the first, although very brief, description of the potato in the Swedish language.⁷

The noble household was also the setting in which Åke Rålamb (1651–1718) produced his encyclopaedia. In the fourteenth part of his *Noble exercises*, (1690, 146 pages, 4to) dedicated to the subject of gardening and cooking, Rålamb very briefly described how, when, and where one should grow *Solanum tuberosum*. Like Rosenhane, he referred to them as ‘tartufeler’, echoing one of the very first European names, the Italian ‘taratouffli’ (they were first thought to be truffles). Though Rålamb never said potatoes were a potential foodstuff – instead he highlighted the plant’s beautiful flowers – he placed it among other edible vegetables, and he did note what could be done to increase harvests. He also considered it important enough to be included in a later, more popular edition (1694, 37 pages, 32mo). Rålamb had had ample opportunities to become familiar with the new plant, as his father had been both a member of the Council of the Realm and the Governor of Uppsala in the 1660s. Moreover, through his father’s second wife he was related to Gustaf Soop, and, having gone to Uppsala University in 1661, he had most likely studied under Rudbeck at some point. Content-wise, however, his description resembles what Rosenhane had to say.⁸ There was a transcript of Rosenhane’s manuscript in the Rålamb family archive, penned by an anonymous author most likely in the latter part of the seventeenth century, perhaps as part of the extensive work on the encyclopaedia, for which Rålamb used hired transcribers.⁹

In so far as it is possible to determine the origin of the knowledge of potatoes in Sweden, there is every indication that it was in the learned and aristocratic circles of the 1650s and 1660s of which Rudbeck and members of the Council of the Realm were part. Two of the most important Swedish knowledge institutions – Uppsala University and the aristocracy’s country houses – clearly played a crucial role in this development. However, as knowledge went it was neither comprehensive nor elaborate, nor even defined. Rather, it was located within two already well-established knowledge domains, namely botany and gardening, and with them cooking and kitchen gardening. In both cases, it was socially exclusive knowledge, introduced from Continental Europe to a handful of cognoscenti. This knowledge intervention undoubtedly resulted in the knowledge being circulated, so it is reasonable to talk of a knowledge breakthrough; however, it appears that the circulation was limited to the social elite, and a small knowledge network at that. At any rate, this did not constitute a societal knowledge breakthrough – with implications for broader society. Nor was there any such ambition.

The second knowledge intervention: the 1720s and 30s

We do not know if Jonas Alströmer (1685–1761) was familiar with the work of Rudbeck, Rålamb, and the others. He made no such reference, but that is perhaps unsurprising, for he belonged to a later generation, and came from a simple background. He was very much a self-made man – ennobled only in 1751, and without any formal education – and wrote for a different audience, for whom such aristocratic and learned knowledge in any case would have seemed remote.¹⁰ Only a few decades had passed when Alströmer in the 1720s began to promote the potato, but his was a very different era. In 1702 Rudbeck had died, the same year as the botanical garden was devastated in the fire of Uppsala. Absolutism and then Sweden's crushing defeat in the Great Northern War (1700–1721) had greatly reduced the aristocracy's power and wealth. Extravagant noble households were mainly a thing of the past. Instead, if the new era was associated with any single concept, it was that of utility. Originally a core concept in mercantilist doctrine, it became a battle cry for virtually every social issue. The promotion of new plants was no exception.¹¹

In his 1727 publication, Alströmer presented himself as a true patriot, careful to point out that he himself had paid for all the costs associated with publication, and that any profits would be funnelled to a charity school. It was as a mark of his humble devotion to king and country that he wanted to introduce a most useful food crop, generally familiar to Europe, but, according to Alströmer, then completely unknown to his Swedish compatriots. Having spent almost two decades abroad, mainly in Britain, becoming both a wealthy and enlightened man, Alströmer had had plenty of opportunities to observe the growing of potatoes. Returning to his war-torn homeland in 1724, he started a major textile manufactory outside the town of Alingsås, and, alongside many other projects, an experimental garden. Three years later he was ready to announce his complete confidence in the 'potato', or the 'jordpäron', which he suggested as the Swedish noun – again, making no reference to earlier Swedish knowledge. The potato, according to Alströmer, was highly suitable to Sweden's soil and climate. His stated mission – in stark contrast to previous knowledge actors – was to 'encourage one and all' to start growing potatoes 'here in Sweden'. Implicit in this was a call for much-needed agricultural reform, especially for the less fortunate, who faced the constant threat of famine.¹²

Alströmer then went on to describe how the potato should be grown, harvested, stored, and cooked, that it could be processed into starch, and the ways his own experience growing potatoes in Sweden diverged from what he had observed abroad. He reassured his readers that potatoes provided sustenance for thousands of poor Irishmen, particularly in times of famine, but also that it was highly valued even by the wealthy, who found it a true delicacy. He also pointed out that potatoes could be dried and subsequently milled into a fine white flour, well suited to make bread.

The knowledge Alströmer set out in his tract would form the basis of much of the Swedish understanding of the potato for years to come. In that sense, it was a highly influential knowledge intervention. Especially impactful was the notion of the potato as a substitute for grain. While knowledge of the potato went on to be transformed in many ways during the following decades, the strong association with grain endured, and up until the nineteenth century potatoes seem primarily to have been consumed as bread. As a substitute, it naturally enough became closely associated with the poor – and with crop failure.¹³

In a material sense, it is hard to imagine a less imposing book than the one Alströmer published in 1727. Hardly more than a leaflet (84 pages, 18mo), it was primarily devoted to sheep farming. In fact, the subject of the potato was only addressed in a final short appendix. However, the publication was written in a highly accessible fashion, in Swedish, and sold at the reasonable price of 13 öre silvermynt. And however brief, it was the first thorough account of the potato in the vernacular. Up until this point, the potato had only been mentioned in passing. Alströmer, however, published the first text exclusively dedicated to the subject, offering a far more comprehensive description.

In the years that followed, Alströmer and his extensive network of friends, relatives, business partners, and political allies across Sweden seem to have exchanged experiences on how to grow and process the potato, and, to a certain degree, they also traded in the crop.¹⁴ Here, Alströmer's 'small tract', as he called it himself, probably played a role, though it is hard to determine just how important it was. When the newspaper *Stockholmske Post Tidningar* carried advertisements for where potatoes could be bought – all of which pointed to the Alströmer network – the book was mentioned as providing instructions for those who wanted to try their hand at cultivating the crop.¹⁵

Alströmer made a fresh attempt to draw public attention to the potato, publishing a second text on the subject in 1733 (52 pages, 32mo). In the foreword, he said he had considered writing an entirely new edition of his earlier publication, but, recognizing there was really not very much to add, he had decided to just write a three-page addendum. The most interesting part was the information on the many different potato growers with whom Alströmer was in touch – even including peasants – and what he had learned from them, which he now shared with his readers. He acknowledged there was indeed a better way to bake bread than the one he had previously described: instead of drying potatoes and grinding them into a flour, they should simply be boiled, peeled, and kneaded into a dough together with some other flour.¹⁶

This knowledge also circulated in a couple of household books in the same archaic genre in which Rosenhane and Rålamb had worked. Written in the German tradition known as *Hausväterliteratur*, they sought to convey all the knowledge the head of any household ought to know. However, the texts clearly indicate that the intended readership was not so much people in charge of households in general, but rather nobles or officials who managed larger estates and farms.¹⁷ The first household book, which dated from 1731 (354 pages, 16mo), was a revised and extended edition of a 1727 publication with the addition of a five-page section on the potato. The author, the manufacturer Eric Salander (1699–1764), was one of Alströmer's closest associates and a sometime employee at his manufactory. It is clear that Salander had been taught by Alströmer. Although Alströmer was never mentioned, Salander clearly followed in his footsteps, using the same examples and similar phrasing. That the two were close was also borne out in a letter which Salander refers to. In it, a parish priest called Eric Nässman gave an account of the successful cultivation of potatoes in Älvdalen (some 350 km north of Stockholm), and how he had baked potato bread that he then sent to the government in Stockholm, which was tasted by the members of the Council of the Realm. This letter was part of the correspondence between Nässman and Alströmer, which the latter mentioned in his 1733 addendum, and which he seem to have shared with Salander.¹⁸ The second household book was written by the vicar Reinerus Reineri Broocmans (1677–1738). In the first volume, published in 1736 (216 pages, 8vo), he included Salander's account verbatim

and with a clear reference. His explanation was simple – he himself had never seen, tasted, or grown this promising plant. He nevertheless deemed it important enough to be included, taking Salander at his word.¹⁹

Alströmer's knowledge intervention thus unequivocally led to a multi-directional circulation process in Sweden. The best example of this was Salander – soon to become one of the most prolific economics writers of his age – who included Alströmer's knowledge in his second revised edition in 1731. Once again, however, this did not constitute a societal knowledge breakthrough, although the spatial circulation was great. The social reach of the aforementioned texts – including the one from 1727, despite it being advertised and presented in a popular form – should not be exaggerated. It appears that, as before, this knowledge mainly circulated within a particular circle – a knowledge network if one will – with Alströmer playing the main role, albeit this time a great deal further down the social ladder. Indeed, very few authors – knowingly or not – chose to relate to this knowledge, or even to mention it in passing.

Furthermore, in subsequent years the potato was all but absent from the many texts and genres where one would otherwise expect to find it. This was true of almanacs, known for regularly presenting new knowledge about both agriculture and discoveries from the New World. This was also true of cookbooks. Despite being a prolific genre, not a single cookbook mentioned potatoes until 1761, nearly a century after Salé.²⁰ Perhaps even more tellingly, the potato is all but absent from the agricultural literature, which increased significantly in the following decades.²¹

If Alströmer's knowledge differed in form to earlier knowledge, it differed even more so in content. The potato was here presented in a new way and in its own right, but also in far more detail than in the past – and in the confines of a larger project. The knowledge interest was not beautification, culinary sophistication, or a deeper understanding of botany, but rather the public good and, in a more narrow sense, the more rational production of foodstuffs. This new knowledge interest – which I discuss further below in the section 'A new demand for knowledge' – was also reflected in the fact that the texts – especially those by Alströmer – addressed a much wider audience, as is noticeable from the different didactic approach and more accessible appeal.

Although the first knowledge intervention in the seventeenth century proved to be something of a dead end, knowledge of the potato did continue to circulate, even though the contemporary Swedish texts never referred to it. When, for instance, Carl Linnaeus (1707–78) in 1730–31 carried out an inventory of the largest gardens in and around Stockholm and Uppsala, he found potatoes in a couple of locations. On a visit to his parental home in Stenbrohult the following year, he also listed the plant in his father's very extensive garden.²² The then fashionable garden-book genre very briefly described the potato, reiterating Rålamb's knowledge.²³ However, these different types of knowledge remained dissociated, circulating in parallel and only sporadically intersecting, as when Johann Ahlich (1680–1743) – one of the leading gardeners in Stockholm – marketed some rare bulbs in the Stockholm newspaper, next to one of Alströmer's potato advertisements.²⁴

The societal knowledge breakthrough: the 1740s

Alströmer had published his initial text in 1727, following a disastrous crop failure the previous year. However, the subsequent period was characterized by good, in many cases truly abundant, harvests. After the ravages of war and the resultant fall in population, there was also relatively good access to land. This all changed in the 1740s. In the early years of the decade, much of Sweden suffered a severe crop failure, and a succession of bad harvests followed. This was the point when the potato once again began to receive attention in print.²⁵

This time, the initiative came from the Riksdag, the Swedish Diet, as the historian Gustaf Utterström has shown. In February 1747, the parliamentary Economy and Commerce Committee had a report read aloud on the benefits of potatoes, especially in relation to crop failure, which had been drawn up by the same committee in 1741, although then without any consequences noted. The committee now returned to its old report, when a few 'knowledgeable men' with experience of the crop outlined the great benefits of the potato to the committee. These men – not named in the minutes – focused on the acute food shortages in many parts of the country and on the large grain imports, significant even in normal years, but truly worrying now as they created a large trade deficit. The committee was told that the potato not only made perfectly decent bread, but also aquavit – probably the first time this was ever mentioned in Sweden. Evidently, the crop failure highlighted the previous knowledge concerning potatoes, but also drove the Diet to cast about for new knowledge that could be disseminated to society at large.²⁶

Shortly after the parliamentary hearing, Salander informed the Committee that the Royal Academy of Sciences (of which he was a member) was planning to issue a report of some kind on the potato. In response, the Committee informed the Academy that it would very much like to see the Academy go forward with this initiative. Several of the Academy's most influential members, among them two of its co-founders Mårten Triewald (1691–1747) (another long-time friend of Alströmer) and Sten Carl Bielke (1709–53), were very interested in the potato, and the motion was granted. (In fact, it was Triewald and Alströmer who had brought the potato to the Academy's attention back in 1739.) Now the Academy turned to Alströmer, one of its other influential co-founders, who, in his role as editor, in turn invited three men to offer short comments on the subject.²⁷ These reflections were then published in the quarterly journal of the Academy, in the early autumn of 1747, in a print run of 500 12mo copies.²⁸ They were also referred to in great detail in the Stockholm newspaper *Stockholms Weckoblad* and in the learned periodical *Lärda Tidningar*.²⁹

Alströmer's position in the Academy clearly left its mark on the publication, and his claim to be the great advocate of the potato was now confirmed in print. The first contribution, written by Alströmer's teenage son, Patrick (1733–1804), set the tone. In seven pages, it recapitulated what his father had already presented, with explicit references to both of his publications.³⁰

The most substantial contribution, fifteen pages long, was written by Jacob Albrecht von Lantingshausen (1699–1769). Lantingshausen had recently returned to Sweden to be appointed major-general after more than twenty years of foreign military service, mainly in the Rhineland. It was this foreign experience that Alströmer asked him to present to the Academy. Lantingshausen explained that the potato was very widespread in Germany,

and that it had proved to be just as beneficial as Alströmer claimed. He consistently spoke of Alströmer as a patriot and a leading light: it was he who should have all the credit for this knowledge having reached Sweden. Most having already been said on the matter, Lantingshausen still wanted to make a few additions and careful corrections. A new element in Lantingshausen's account was that the potato should leave the kitchen garden for the fields. He was also the first in Swedish to describe the potato as adequate feed for domestic livestock, and also that it could be used for making aquavit, even though he had not seen this himself. As Utterström points out, one might assume that Lantingshausen was the one who had spoken about this procedure to the parliamentary Committee of which he was a member, on the basis of his German experiences.³¹

Someone who had actually witnessed an experiment with distilling was Carl Skytte, author of the third contribution, who in just two pages gave a brief outline of the procedure.³² The following year, the Academy published a similarly short contribution by Eva Ekeblad, in which she described, on the basis of her own successful experiments, how she had used potatoes to produce both aquavit and starch, the latter something Alströmer had previously only mentioned as a possibility.³³

Following the Diet of 1746–47, at which the Estates of the Realm frequently discussed how knowledge of potatoes could be disseminated as widely as possible, the issue was handed over to the government. Once again, we are able to discern Alströmer's key role in this process. In March 1748, the government asked for a report from the responsible departments on the measures proposed by the Diet. The report was at least drafted by Alströmer, who had served as a senior official at one of departments, the Board of Commerce, since 1739. Published in July 1748, the report rejected the compulsory provisions advocated by the Diet. Before anyone could be obliged to grow potatoes, the supply of seed potatoes had to be secured. As potatoes were still only grown on a very limited scale, seed potatoes would have to be purchased overseas. The government departments thus recommended that the government acquire 100 barrels of foreign seed potatoes ready for the following spring, which the government subsequently approved. It was also suggested that the Board of Commerce issue to all Swedes a printed summary of all the relevant knowledge on the subject. This too was approved.³⁴

The task of writing the public announcement was given to Ulrik Rudenschöld (1704–65), a junior official at Alströmer's department, who had studied agriculture abroad for many years on behalf of the department. His subordinate position vis-à-vis Alströmer is clearly seen in the announcement, both in the phrasing and the detailed description of the cultivation method. The outline was mainly taken from Alströmer *fil*s. However, Rudenschöld – he too a member of the Royal Academy of Sciences – also incorporated the knowledge conveyed by Lantingshausen the previous year: the source of the information that potato plants should be trimmed, and that the leaves could be used as animal feed. However, Lantingshausen's account of how people in Alsace planted potatoes together with beans and cabbage was dismissed. Ekeblad's information about the manufacturing of flour, bread, and aquavit was also incorporated. Her account of the process for producing potato flour and potato starch, however, was considered redundant, as the announcement was aimed at 'the service and relief of the peasantry and the poor', never mind more elaborate culinary uses, which were also declared irrelevant in this context.³⁵

The public announcement opened with the best arguments for growing potatoes. The potato did not require much fertilizer as it liked poor soil; it produced very high yields; it was resilient; it was a healthy food for both humans and animals; and it did not need to be threshed, weeded, dried, or ground. The fact that the work involved in growing potatoes did not coincide with the peak periods for other crops was highlighted as a key advantage. These arguments were general in nature and aimed at all farmers alike. However, the explicit purpose of the announcement was to encourage all peasants in Sweden to grow potatoes. As the announcement stressed, the fact that potatoes had been known in Sweden for more than two decades and were already grown by a few would hardly prove beneficial unless the knowledge was made 'public'. Nor was there any doubt as to the urgency, given successive crop failures. The close relationship between crop failures and knowledge – or rather ignorance – was also pointed out: Swedes frequently suffered crop failures, and those who lacked the 'strength, experience or inclination to properly cultivate the earth' were at even greater risk. Sweden had a long and arduous road ahead – in the dissemination and implementation of new knowledge – if its agricultural sector were to improve to such an extent that its people would not starve.

For the purposes of disseminating this knowledge, the official public announcement system was used, which Swedish authorities had benefited from for generations when they wanted to inform Swedes of something of particular importance. In April 1749, 4,000 copies of the text were distributed to both the civil and the ecclesiastical administration. According to a well-regulated procedure, the actual announcement was then made by the parish priests, read aloud from the pulpits of all churches – some 3,000 – across the country. The priests were explicitly prohibited from cutting or in any way summarizing the contents of these texts: everything had to be read in full, which in the case of these eight dense quarto pages would have taken some time. The congregation – nobility and peasants alike were required to attend church, with very high church attendance as a result – was expected to listen in silence, and had the opportunity to read the announcement on their own afterwards.³⁶

Rudenschöld's announcement and the manner in which it was disseminated in 1749 to virtually every Swedish subject, together with the duly imported and distributed seed potatoes, marked a societal knowledge breakthrough in the country. Compared to the earlier publications that had discussed the potato, in rather expensive editions of a few hundred copies at most, this had a completely different kind of impact, especially as it was backed by all the royal and ecclesiastical authority and legitimacy that came from an announcement of this kind.³⁷

However, almost as important was the fact that the Royal Academy of Science chose to include sections on the potato in several editions of the almanacs it had just been granted a monopoly to publish. Thus, in 1749 – that is, the first year the Academy itself could decide the content of the almanacs – a short essay, four pages 48mo long, was included. It was written by Erland Zacharias Tursén (1722–78) – a junior clerk at the Academy, who attended Alströmer's sheep-farming school outside Alingsås – and was largely a précis of Alströmer's knowledge, with explicit references to both his publications. The edition numbered some 18,000 copies. The following year, an edited extract of Rudenschöld's public notice was included, in two different editions, eight pages long. The Finnish edition was translated into Finnish, the language primarily spoken in the eastern part of the

country. These two editions numbered 53,000 copies in total, at a time when Sweden – including present-day Finland – counted just some 400,000 households.³⁸

Few, if any, types of secular printed material had an impact that could even begin to measure up to the almanac. It was sold at a very low price – 2 öre silvermynt, as it had been for a long time – and at a time when even the most popular newspaper, *Stockholms Post Tidningar*, had a print run of only 1,500 copies, it was printed in uniquely large editions. It thus reached a considerable portion of the population, for whom it was a much-loved book. The almanac underwent only very small, gradual changes in terms of form and content. By the mid eighteenth century, in addition to astronomical data such as weather forecasts and dates for sowing, it also included miscellaneous information about such things as postal rates and market days. For many ordinary people, the almanac was indispensable, and frequently the household's only printed book. Furthermore, the almanac also included a short essay on a subject of public interest, most often farming or medicine, and this was something the Academy of Sciences continued and enlarged on. This was also the format in which the knowledge of potatoes now was presented.³⁹

It should be noted that the impact of Rudenschöld's announcement continued long after its first mid-century impact, as the number of texts promoting the potato increased considerably. Revised and reprinted, it became a natural point of reference in the field. The new lexicographical economics literature in Sweden in the 1750s and 1760s, for instance, drew heavily on the announcement, citing it at length.⁴⁰ In 1772, following a disastrous harvest failure, it was reprinted *in extenso* on the behalf of the newly founded Patriotic Association (an organization dedicated to the promotion of Swedish agriculture) and widely distributed across the country.⁴¹ Finally, one must also mention the abbreviated, updated version of the announcement, printed in several large editions in 1773–74, and edited by Anders Lissander (1704–86), another senior official at the Board of Commerce, fellow Hat Party loyalist, and former employee at the Board of Manufacturing.⁴²

Knowledge actors and knowledge institutions

The societal knowledge breakthrough in 1749–50 did not result in any general breakthrough concerning the *practice* of growing potatoes in Sweden. From an apparently modest start, however, it seems that potato cultivation had increased considerably in many places in subsequent years. Nevertheless, it would not be until the 1770s, when Sweden suffered yet another severe crop failure crisis, that the practice of growing potatoes broke through in Sweden on a significant scale, and it was not until the early nineteenth century that the potato became a Swedish staple crop. Clearly, this agricultural transformation required more than just knowledge. A shortage of seed potatoes, legal limits on alcohol manufacturing for private use, and mainly unenclosed farmland were just a few of the factors for a long time standing in the way of the general breakthrough in potato cultivation.⁴³ The societal knowledge breakthrough of 1749–50 – when most Swedes acquired at least a rudimentary understanding of the potato and how it should be grown, harvested, stored, cooked, and refined – nevertheless marked the crucial first step in this protracted process.

The societal knowledge breakthrough of 1749–50 was anything but the result of a linear, cumulative, predetermined diffusion process, spanning almost a full century. The origins of the knowledge are also of little guidance in understanding this breakthrough. Instead, it was the result of favourable circumstances, which, from the more general perspective of the history of knowledge, may be attributed to the knowledge actors and knowledge institutions involved, and the growing new demand for knowledge.

It should be noted that knowledge of the potato did not just trickle into Sweden from abroad, but was deliberately set in motion on the initiative of individual stakeholders. This was not an example of a Swedish periphery to a European centre, with Sweden a passive recipient. Nor did the knowledge exclusively move in one direction; instead, it circulated both to and from Sweden, while being transformed in the process.⁴⁴ The determined efforts by Jonas Alströmer and his associates stand out here. Alströmer in particular exhibited a strong desire to share knowledge of potatoes with the whole of Swedish society. In truth, he was a prime example of the emphasis on utility, mercantilism, and patriotism of his time, and its patriarchal views on the diffusion of knowledge: useful knowledge could only benefit the general public if enlightened men such as Alströmer undertook to pay for it and do the business of knowledge dissemination. These efforts and the civic credibility following on from this also came in handy in the political sphere in the pursuit of lucrative state loans and subsidies, something that should probably not be underestimated.

Another key factor was the significant and increasing resources at the disposal of these knowledge actors. Their access to several important knowledge institutions, from where it was possible to promote knowledge both directly and indirectly and to transcend social boundaries, seems to have been particularly important. The Royal Academy of Sciences – to which Alströmer, Salander, and Rudenschöld all belonged and to which Eva Ekeblad would also be included by dint of her husband Clas Ekeblad's membership – clearly played a crucial role. Alströmer's prominent position at the Board of Commerce, where he was assisted by Rudenschöld, represented another important platform, enabling the network to communicate nationwide. The parliamentary Committee of Economy and Commerce, the Board of Manufacturing, and Alströmer's manufactory and sheep-farming school should also be mentioned.

This knowledge network, centred on Alströmer, was also united in its political preferences and excellent political connections. Lantingshausen, for instance, was a rising star in the ruling Hat Party, soon to become one of its leading figures; he was also a member of the Diet, and sat on the Committee of Economy and Commerce. Ekeblad, on the other hand, had been born into the Hat Party (as Eva De la Gardie): her parents had belonged to its early leadership, and her husband attained increasingly prominent positions. Indeed, in December 1746, Clas Ekeblad joined the government – where he would show a great deal of interest in the potential of the potato – just as the Hat Party was about to consolidate its position. Rudenschöld, if not through his superior Alströmer then through his own family, could also be linked to the Hats. And not forgetting that the Academy of Sciences had been founded under the auspices of the Hat Party in 1739, and would long continue to be closely associated with the party.⁴⁵ Alströmer and Salander were seen as some of the most high-profile proponents of the Hat Party's protectionist manufacturing policy. As owners of two of the largest manufactories in the country, and courtesy of their influential

political patrons in the Hat Party, they were able to ensure very substantial government subsidies for very long periods. This made both of them politically controversial, and they were heavily criticized by the political opposition.

To sum up, the people in the Alströmer network, who set out to make the potato better known in Sweden did not lack resources and power. Without, it is difficult to see how this breakthrough would have been made possible at that stage. The initial intervention in the 1720s, albeit not without significance, was of limited success. However, when the same network tried again twenty years later, it did so from a much different position, this time working from within several important knowledge institutions and with much stronger external support. This is true also with respect to the content of the knowledge: what enabled Alströmer and his associates to determine the contents of the knowledge was the positions of power they eventually managed to reach. Hence, this speaks to the general point – long established in the sociology of knowledge, as well as in the history of science – that in order to understand the transfer of knowledge, and perhaps even more so a societal breakthrough of knowledge, one needs to pay close attention to the level of power and resources available to the networks and institutions involved.

The extended Alströmer network continued to play an important, if less dominant, role in the subsequent communication process. In 1756, Carl Carleson (1703–61) – a civil servant also associated with the Hat party, and a shareholder in Alströmer's manufactory – included the potato in his economic encyclopaedia, this time in the form of extracts drawn primarily from Alströmer and Rudenschöld.⁴⁶ A few years later, Lorens Wolter Rothof (1724–87) – at the time a lecturer at Alströmer's sheep-farming school – followed Carleson's example, and after that the potato had a given place in all subsequent lexicographical works.⁴⁷ One should also mention Alströmer's sons, Patrick and Johan, who both continued to be vocal and influential public advocates of the potato.⁴⁸

A new demand for knowledge

When explaining the societal knowledge breakthrough in 1749–50, it is equally important to recognize the new demand for knowledge of the potato. This demand was already in evidence in the 1720s and 1730s, the period when the Alströmer network were able to redefine the potato, placing it in the context of agriculture, the public good, and crop failure. This revised potato knowledge became increasingly socially relevant, as the elite was ever more concerned with agriculture, economics, food security, and population policy.

Following Sweden's defeat in the Great Northern War, the general sentiment was that Sweden needed to be revived. This perspective included a number of different areas, and not least agriculture, which was highlighted in a new way, often by looking at Britain, which was the main agricultural model of the day. One reason for this was the import of grain, which had become significant – in relative terms – after Sweden lost its grain-producing Baltic provinces to Russia, and which resulted in a negative trade balance. According to the mercantilism of the time, this represented a major problem. In the 1740s, the interest in agricultural matters increased further, as was reflected not least in the sharp increase in farming literature.⁴⁹

The growing interest in agriculture among the social elite was a general European trend. This was due in part to a desire to reduce imports of foodstuffs and thus improve the trade balance, a discussion which in Sweden – not least at the Diet of 1746–47 – came

to turn on how the extensive alcohol production could be reduced and regulated, and encouraged to use the potato as a substitute for grain.⁵⁰ Another new and gradually more important motive was food security. All across Europe, governments and elites began to rethink the basis of national wealth and strength. Centred on the concept of the population, a wide-ranging field of knowledge arose, examining how the state should best ensure a large, healthy, and productive population. The stakes were undoubtedly high, because the result of this project would determine – it was thought – the economic and military might of the state. Thus viewed as the prime resource of the nation, the state had to secure an ample supply of nourishing food for the population. It was within this new framework of governance that the potato began to attract ever more interest in the eighteenth century, the historian Rebecca Earle argues.⁵¹

The new demand for knowledge about the potato was further strengthened by the crop failures of the 1740s, and in particular the severe subsistence crisis in the early years of the decade. Such knowledge was acutely socially relevant, and helped secure political support for a broad knowledge intervention, injecting new life into the virtually moribund communication process.⁵² Thus, the societal knowledge breakthrough that occurred in Sweden in 1749–50 can be seen as an example of how large-scale societal crises, as Johan Östling and David Larsson Heidenblad have suggested, can create a new demand for knowledge and initiate a socially much broader form of knowledge circulation.⁵³

Final remarks

For historians of knowledge, writing a societal history of knowledge implies an important analytical shift, and almost inevitably places different actors, institutions, events, time periods, practices, sources, and media in focus.⁵⁴ In the literature on the potato in Sweden, the years 1749–50 have been at best very peripheral. The same must be said of important knowledge actors such as Eric Salander, Ulric Rudenschöld, and Erland Tursén, not to mention the thousands of parish priests, civil servants, and peddlers in almanacs who were crucial in realizing the societal knowledge breakthrough. However, for a societal history of knowledge, and particularly one centred on the issue of societal knowledge breakthrough, events and actors such as these must be closely scrutinized.

Conversely, the origins of knowledge and its initial circulation and diffusion are not always relevant to such a history. As this study demonstrates, such an approach avails us little if we want to know when, how, and why knowledge of the potato suddenly spread in Sweden. Nor does the original knowledge tell us much about the content of the knowledge that finally broke through. The often-stated theoretical premise that knowledge is not a fixed entity, but is continuously transformed in the communication process – as it moves between different media and genres, and migrates socially and culturally – is thus borne out empirically. We have good reason to abandon the clear-cut distinctions between the making and the communication of knowledge. Rather, as James Secord suggests, we ought to think of knowledge-making as a form of communicative action, and every text as the trace of a communication process, nuanced by anticipated audiences and genre conventions.⁵⁵ Knowledge of the potato was no exception, as it was continuously remade as it was communicated. In 1749–50, we are certainly dealing with a one-directional diffusion of knowledge. In terms of content, however, this particular knowledge was the result of a protracted circulation process spanning more than two

decades and including many different actors, apart from Alströmer himself, which ultimately helped transform this knowledge.

Close attention to the communication process also calls into question the approach (whether implicit or explicit) of taking the number of texts covering the knowledge to indicate its social standing and impact. The fact that, following the societal knowledge breakthrough in 1749–50, the potato had become common knowledge in Sweden cannot be detected this way, as the search for an increasing number of texts instead would leave us firmly in the late eighteenth and early nineteenth centuries.⁵⁶

The same caution must be extended to the question of spatial circulation and dissemination. Although knowledge of the potato undoubtedly did move back and forth between distant places – e.g. Alingsås, Älvdalen, Stenbrohult, Uppsala – it was not consistent, and for a long time its social reach and significance were limited. This is also true of the conventional narrative of the dates when the potato was first ‘introduced’ across Europe: for a societal history of knowledge, sensitive to the process of knowledge transformation, such chronologies are of rather little value. Again, as Philipp Sarasin and Andreas Kilcher say, knowledge cannot be viewed as a free-flowing, fixed essence, but rather as something that is mediated in its materiality, embedded in social contexts, socially constructed, and unevenly distributed.⁵⁷ In early modern Sweden, the potato was certainly not known everywhere, and the knowledge was not equally accessible to all. In reality, the communication process tended to slow, and knowledge had difficulties crossing social barriers. It took a long time, and a great deal of effort, for most Swedes to learn about this most useful earth pear.

Notes

1. Berggren, “Bidrag till historien”; Utterström, “Potatisodlingen”; Osvald, *Potatisen*; Gadd, *Järn och potatis*. For more general Swedish overviews, see Ingers, *Bonden i svensk historia*, 134ff; Heckscher, *Sveriges ekonomiska historia*, 202–9; Gadd, *Den agrara revolutionen*, 255ff. These same tendencies are salient also in the international research, see for instance Salaman, *The History*; Langer, “American Foods”; Brown, “Origin and History”; Hawkes and Francisco-Ortega, “The Early History”; Zuckerman, *The Potato*; and Smith, *Potato*.
2. Secord, “Knowledge in Transit”; Sarasin, “Was ist Wissensgeschichte?”; and Östling et al., “The History of Knowledge”.
3. Fan, “The Global Turn,” 252–3.
4. Secord, “Knowledge in Transit,” 655. Also, see Daum, “Varieties of Popular Science”; Östling and Larsson Heidenblad, “Cirkulation”; and Bodensten, “Political Knowledge”.
5. Rudbeck, *Catalogus plantarum*; Rudbeck, *Hortus Botanicus*; Rudbeck, *Deliciae Vallis Iacobææ*. Also, see Osvald, *Potatisen*, 56–7; Eriksson, “Olof (Olaus) Rudbeck”; Eriksson, *Rudbeck*, 207–8; Martinsson and Ryman, *Hortus Rudbeckianus*, 10ff.
6. Salé, *Then Frantzöske-Kocken*, 90, with a second edition in 1684; Du Rietz, *Gastronomisk spegel*, 52. For the new French cuisine, see Peterson, *Acquired Taste*.
7. Rosenhane, *Oeconomia*, 130; Mörner and Skoglund, “Schering Rosenhane”; and Berggren, “Bidrag till historien,” 22.
8. Rålamb, *Adelig öfningz*, 9; Dahl, “Åke Rålamb”; Rålamb, *Utaf Adelig Öfning*, 29, with a second edition in 1695. However, there is no mention of potatoes whatsoever in the heavily revised, abridged edition published after Rålamb’s death, which ran to several editions, cf. Osvald, *Potatisen*, 57.
9. Kungliga biblioteket, Rålambska manuskriptsamlingen, fol. no. 28.

10. Heckscher, "Jonas Alströmer". Jonas Alströmer was born Jonas Toresson, later changed his name to Alström, and took the name Alströmer when he was ennobled in his sixties.
11. Lindberg, 'Inledning,' 17–8.
12. Alström, *Den Swänska*, 62–2.
13. Utterström, "Potatisodlingen," 180. For a general European account, see Zuckerman, *The Potato*.
14. Utterström, "Potatisodlingen," 147–8.
15. *Stockholmske Post Tidningar*, 1727, nos. 34–35, 1728, nos. 4, 14, 18, 1731, nos. 8, 19.
16. Alström, *Fåra-Herdans*, 50–2.
17. Eriksson, "Broocman".
18. Salander, *Tilförlåtelig*, 102, 159–64; Magnusson, "Eric Salander". The book was eventually also published in third (1758) and fourth (1775) editions. The section on potatoes was only slightly revised: information on potato starch was added and the importance of the potato at times of crop failures was further stressed – it was said that those with access to potatoes never starved, as the people of Ireland, Scotland, and the Caribbean could attest. Salander also briefly mentioned the usefulness of potatoes in his *Salus Patriæ*, 76. When Carl Linnaeus visited Nässman's parish in 1734, the peasants, however, had mostly given up on the crop, see *Carl von Linnés ungdomsskrifter*, vol. 2, 271.
19. Broocman, *En Fulständig*, 1:83–4, 2:112–5, 3:40–1. Also, see Bring Larsson, "Kommentera," 997–8.
20. *Johan Winbergs Kok-Bok*, 380–1. For bibliographical information, see Du Rietz, *Gastronomisk spegel*. However, the potato only became common in the genre in the 1790s. Cf. Earle, "Promoting Potatoes," 150.
21. Myrdal, "Lantbrukslitteraturen". Cf. Earle, "Promoting Potatoes," 150. There was also Serenius, author of *Engelska åker-mannen* (1727), who had lived in Great Britain for a longer period of time. *Ibid.* 160–1, Serenius cites Mortimer, *Whole Art*, 109, which – en passant, and very briefly – described how the Irish grew potatoes, or 'Ertskäckor' in Serenius' translation. I would like to thank Linnea Bring Larsson for bringing this to my attention.
22. *Carl von Linnés ungdomsskrifter*, vol. 1, 165, 223, 298; *Caroli Linnæi Adonis Stenbrohultensis*.
23. Ahlich, *Den Swenske*, 2:115, with a second edition in 1744; Dahlman, *Den Färdige Trädgårdsmästaren*, 130; Kammecker, *En Til sitt kära Fäderneslandz*, 292. Also, see Osvald, *Potatisen*, 57–8.
24. *Stockholmske Post Tidningar*, 1727, no. 35; Ahlich, *Nationalencyklopedin*.
25. Edvinsson, "Swedish Harvests".
26. Utterström, "Potatisodlingen," 148–51.
27. *Kongl. Svenska ... 1747*, 191; Utterström, "Potatisodlingen," 151–2; Lindroth, *Kungl. Svenska vetenskapsakademiens historia*, 262; and Koerner, *Linnaeus*, 149.
28. Lindroth, *Kungl. Svenska vetenskapsakademiens historia*, 127.
29. *Lärda Tidningar*, 1747, no. 50; and *Stockholms Weckoblad*, 1747, nos. 49–51.
30. *Kongl. Svenska ... 1747*, 185–91.
31. *Ibid.*, 192–206; Utterström, "Potatisodlingen," 150; Jägerskiöld, "Jacob Albrecht von Lantingshausen".
32. *Kongl. Svenska ... 1747*, 231–2.
33. *Kongl. Svenska ... 1748*, 277–8; and Hildebrand, "Eva Ekeblad f. De la Gardie".
34. Utterström, "Potatisodlingen," 152–3.
35. Rudenschöld, *Underrättelse ... 1749*; Utterström, "Potatisodlingen," 154; Johanson, "Carl Rudenschöld". Here, one might also mention that the people of the county of Skaraborg had been sent a similar announcement the previous year, also in the form of a compilation of Alströmer's and Lantingshausen's earlier texts. The initiator was Gabriel Falkenberg (1716–82), who served as the governor of the county – not far from Alströmer's manufactory in Alingsås – and who was an associate of Alströmer's. See Stråle, *Alingsås manufakturverk*, 74; Berggren, "Bidrag till historien," 27; Utterström, "Potatisodlingen," 155; Hildebrand, "Falkenberg, släkt". The public announcement for the county of Skaraborg on 10 August 1748 seems to be lost; however, it is reproduced in Staaf, *Oeconomiska Samlingar*, 1–16. It strengthens the impression

that the area in and around Alingsås was one the earliest centres for the large-scale cultivation of potatoes in Sweden. Also, see Linnæi, *Wästgöta-Resa*, 131.

36. For the public announcement system, see Reuterswärd, *Ett massmedium*.
37. Utterström, "Potatisodlingen," 154–61; Myrdal, "Lantbrukslitteraturen," 16–8.
38. *Almanach ... 1749; Almanach ... 1750; Almanach eli ajan*; Lindroth, *Kungl. Svenska vetenskapsakademiens historia*, 827, 837, 848; Räf, *Fårkonsulenter*, 111–3; and Hebbe, ed., *Den svenska lantbrukslitteraturen*, 200, 813.
39. Klemming and Eneström, *Sveriges kalendariska litteratur*; Lindroth, *Kungl. Svenska vetenskapsakademiens historia*, 823ff; and Oscarsson, "Från statstidning," 142.
40. See notes 46 and 47 below.
41. Rudenschöld, *Underrättelse ... 1772*; and Utterström, "Potatisodlingen," 169.
42. Lissander, *Beskrifning*; Hebbe, ed., *Den svenska lantbrukslitteraturen*, 201–2. Furthermore, the text was translated, into both Danish (1773) and Finnish (1793). Also, see Utterström, "Potatisodlingen," 169–70; Gidlöf, "Anders Lissander".
43. Utterström, "Potatisodlingen," 166–85; Osvald, *Potatisen*, 82–3, 88–98; Gadd, *Järn och potatis*, 108ff. Recently, Rebecca Earle has argued that potato cultivation may have been more widespread than previously thought, throughout early modern Europe. Earle, "Promoting Potatoes," 148–51. At the present, however, there is little empirical evidence to support this for Sweden. Earle refers to unpublished data found by Lili-Annè Aldman, that potatoes were imported to a couple of parishes in southern Sweden through the port of Karlshamn as early as the mid-seventeenth-century. See also, Linnæi, *Skånska Resa*, 155–6; *Wälmente Tankar* seems to suggest that potato cultivation was more widespread in mid-eighteenth-century Sweden than was once thought.
44. Texts by Alströmer Sr, Alströmer Jr, Skytte, and Lantingshausen, were all translated and put into transnational circulation, see Hebbe, ed., *Den svenska lantbrukslitteraturen*, 132; Earle, "Promoting Potatoes," 147.
45. Hildebrand, *Kungl. Svenska vetenskaps akademien*, 238, 619ff, *passim*.
46. Carleson, *Hushålls-Lexicon*, 575–95, also reprinted in 1769; Stråle, *Alingsås manufakturverk*, 72; and Boethius, "Carl Carleson".
47. Rothof, *Hushålls-Magasin*, 367–9; and Räf, *Fårkonsulenter*, *passim*.
48. Utterström, "Potatisodlingen," 169, 175; Osvald, *Potatisen*, 76–8; Hebbe, ed., *Den svenska lantbrukslitteraturen*, 202–3.
49. Morell, "Den agrara ingenjörskonsten"; Myrdal, "Lantbrukslitteraturen"; and Magnusson, Lars, *Sveriges ekonomiska historia*, 226–30.
50. Evers, *Den svenska brännvinslagstiftningens historia*; and Utterström, "Potatisodlingen i Sverige," 150, 182.
51. Earle, "Promoting Potatoes," 151–7. Also, see Johannisson, *Det mätbara samhället*.
52. Looking at the strong correlation over time between years of crop failure and the publication of texts promoting potatoes to the general public – the later eighteenth century in Sweden – it is obvious that such societal crises accelerated the societal knowledge circulation process. Both Utterström, "Potatisodlingen", and Osvald, *Potatisen*, briefly alluded to this, in particular in relation to the crop failures of the early 1770s. For Europe, see for instance, Langer, "American Foods"; Burton, *The Potato*; and Gentilcore, *Italy*.
53. Östling and Larsson Heidenblad, "Cirkulation," 283.
54. *Ibid.*, 281–2.
55. Secord, "Knowledge in Transit," 661.
56. Cf. Myrdal, "Lantbrukslitteraturen," 37.
57. Sarasin and Kilcher, "Editorial," 9–10.

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