1.1. The Foundation of the Royal Society of Sciences

“A heavy muggy fog covered the ground; the wind, almost imperceptible, stubbornly remained southerly and easterly; the sun was not seen for several months, but nevertheless there prevailed from October to the end of December a moist heat, which prompted a languishing spring growth. We prayed in distress: ‘God help us and bring us winter’; but winter did not come until Christmas Eve” (Forssell (1883, p. 275). These were Hans Forssell’s words in a speech to the Swedish Academy describing the situation in Uppsala at the time of the establishment of the Royal Society of Sciences at Uppsala. But the weather was not the only source of gloom. At the same time a serious epidemic called the bubonic plague was spreading throughout the country, having come to Sweden with seafarers arriving in Stockholm from the Baltic countries (Broberg, 1879 and Hult, 1916). This meant that Sweden had to face further tribulations following the many years of war and a traumatic defeat at Poltava on 28 June 1709. According to the 18th-century astronomer Eric Prosperin, this entailed that “we did not even know whether the King was alive or dead, much less expect any help from Him” (Prosperin, 1791, p. 8). To be sure, Magnus Stenbock had scored a victory on 28 February 1710 at Helsingborg, but the state of the nation was far from good. This was summarized in a poem at the Bicentenary Banquet of the Society thus (Dunér, 1911, p. 33):

But not enough were fires and war;
There came another horrible guest
Sneaking in from Eastern shore,
One, whose fearsome name was Pest!

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1 Email: Lars.Engwall@fek.uu.se. This chapter is a translation by Dr. Donald MacQueen of a lecture at the Tercentenary Celebration on November 13, 2010.
The plague spread rapidly from Stockholm, first to the Lake Mälaren Valley and Upland, then to major parts of the country (Hult, 1916, pp.17-80). On 23 October plague victims died at Flottsund, and the students began to leave Uppsala. On 8 November the Council of the Realm declared that no one was to be permitted to travel from one county to another or from one city to another. In the same decree, the postmaster was ordered to fumigate any mail from infected areas before delivering it. (Forssell, 1883, pp. 273-274 and Hult, 1916, p. 87).

Admittedly, it has been questioned whether the plague truly played such a crucial role in the founding of what would become the Royal Society of Sciences at Uppsala (Liljencrantz, 1939, p. 295). But there can be no doubt that the conditions for conducting normal academic pursuits were poor indeed. In the words of Bishop Jesper Swedberg in a contemporary account: “many were dying. Wherefore the young people went away; and all Academic exercises ceased until the following year” (Swedberg, 1711, p. 592). It is also evident that it was the then 35-year-old university librarian Erik Benzelius the Younger who took the initiative to create the Collegium Curiosorum or the Guild of the Curious, as the Society was originally called. It was also convincingly demonstrated by Eric Prosperin that this indeed took place in 1710, despite the lack of either a charter or any minutes taken at meetings in November and December 1710 (Prosperin, 1791, pp. 10-11 and Dunér, 1910, pp. 6-8, see also Dunér, 2004, pp. 55-61).

The initiator, Eric Benzelius, the Younger, was well acquainted with the academic environment from his early years. As his father, Eric Benzelius, the Older, was first professor of theology and subsequently archbishop, the son was in a position to meet many prominent academics at Uppsala. At the tender age of twenty-seven he was appointed university librarian in the summer of 1702 (Forssell, 1883, p.171). He was thus even better poised to gather suitable individuals for academic conversations.

In the autumn of 1710 Benzelius invited seven people. Three of them were members of the Wallerius family. They included the father, Harald Wallerius, the eldest member of the group. For the previous twenty years he had been professor of mathematics but had started his career at the University as director musices and deputy librarian (Gezelius, 1778-1787, Part 4, p. 365). Of Harald Wallerius’ sons, the elder, Johan, was an adjunct in mathematics and succeeded his father in the subject in 1712. He was also known for his eloquence and has been described as “famous in the academy as a musician, orator, and occasional poet” (Forssell, 1883, p. 279). His younger brother Göran had just returned from an extended journey to Denmark,

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2 Forssell (1883) comprises a comprehensive biography of Erik Benzelius the Younger. An excerpt from the biography in his own hand for the Royal Swedish Academy of Sciences (Benzelius, 1743) was published in Lidén (1792, pp. XIV-XXVII).

3 The father was named professor of theology in 1668, bishop of Strängnäs in 1687, and archbishop in 1700 (Boëthius, 1920-1922, p. 215).
Germany, France, and England. He went back to the Royal Collegium of Mining, where he had previously been employed (Gezelius, 1778-1787, Part 4, pp. 362-365).4

Another representative of the sciences was Per Elvius, who, following two successfully defended dissertations at Uppsala, had been appointed professor of mathematics and astronomy at the University. That following autumn, in 1711, he would be Vice Chancellor of the University. He was preceded in that post by another of the charter members of the Society, namely Johan Upmark, later ennobled as Rosenadler. For twelve years he had held the Skytte Chair, with Latin elocution as his special field (Carlsson, 1920, p. 71 and 1919, p. 69).

The other two members represented the medical sciences. One was Olof Rudbeck the Younger, who had succeeded his father as professor of medicine eighteen years earlier. Like his father, his interests were broad, and he made a name for himself as a natural historian and language scholar. His medical colleague was the professor of anatomy and practical medicine, Lars Roberg. He had taken his doctorate at Leiden in 1689 and was the initiator of the Oxenstierna House, the predecessor of the University Hospital. He has been characterized as “the University’s eccentric, a quick-witted man of great general erudition and uncommon practical skill, known for his cynicism and stinginess” (Forssell, 1883, p. 280).

Thus, the eight men who founded the precursor to our Society had a variety of backgrounds. They included the relatively young Eric Benzelius, the Younger, Göran and Johan Wallerius; the middle-aged Johan Upmark, Per Elvius, and Olof Rudbeck, the Younger; and the somewhat older Lars Roberg and Harald Wallerius. They represented a broad spectrum of knowledge: mathematics, Latin elocution, medicine, librarianship, and mining.

The main purpose of the *Collegium Curiosorum* was to meet once a week for scholarly conversations. They were also to correspond with Emanuel Svedberg and Christopher Polhammar, who were subsequently better known by their noble names of Swedenborg and Polhem. Svedberg was in London, while Polhammar was at Stjärnsund in Dalecarlia, where he was directing work at a textile factory. In modern parlance, these two might be termed corresponding members. The contact with Svedberg was natural for Benzelius, as he had married Svedberg’s seventeen-year-old sister Anna in 1703 (Forssell, 1883, p. 171). Benzelius’ correspondence with Polhammar was extensive. In his letters during 1710 Polhammar also argued in favour of creating an academic society, so his own findings could be disseminated. It is also said that it was Polhammar who suggested the name *Collegium Curiosorum* in a letter from 17 December 1710 (Liljencrantz, 1940, pp. 36-37).

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4 Regarding Göran Wallerius, see also Lindqvist (1984) and Tilas (1748).
1.2. Foreign Inspiration for the Foundation

To understand the advent of the *Collegium Curiosorum* it is not enough to say that in 1710 the country was facing difficult times for regular academic activities and that Polhammar was championing the cause in his letters. It was also important that Eric Benzelius had found international inspiration for the project. Of course, the original notion of the academy harks back to the *Akademeia*, Plato’s academy outside the walls of Athens. No successors were to be founded until the Renaissance, when the *Accademia Platonica* and the *Accademia della Crusca* were established in Florence in 1474 and 1582 respectively. During the 17th century more academies were founded, in France both the *Académie française* in 1635 and the *Académie des sciences* in 1666, as well as the British *Royal Society* in 1662 (Hildebrand, 1939, Ch. 1). All evidence indicates that these societies were models for Gottfried Wilhelm Leibniz, who in turn inspired Benzelius. During his three and a half years of studying in Europe Benzelius had met Leibniz, a meeting that was appreciated by both parties. In a letter to Olof Rudbeck Benzelius described his German host with the words: “Not with one man but with several I felt I was conversing, so great and so wide-ranging is his wealth of knowledge; there was nothing that I wanted to know that he was not able to tell me” (Erik Benzelius’ letter to Olof Rudbeck in September 1698, published in Gjörwell, 1762, p. 358).

It seems only natural that the twenty-something Benzelius would appreciate a man like Leibniz. We can all recall our encounters with famous older colleagues when we were young students. For Leibniz to return this sentiment, however, is not so self-evident. He nevertheless wrote highly appreciatively in French about the young Swede to Johan Gabriel Sparvenfelt. His judgment was: “You have done me a special favour in referring the young Mr. Benzelius to me, a man who is truly in my taste. For he not only burns to learn something and to use his time well but also possesses great actual knowledge and furthermore such a noble and charming manner that he will always win the hearts of everyone wherever he may be. In other words, I have no doubt that he will one day be a new adornment to his country and his family” (Letter from Leibniz to Sparvenfelt dated Hanover, 19 November 1697, published in Bring, 1754, pp. 179-180).

Benzelius met Leibniz during a period when the latter was actively working to create a German academy. This became a reality in 1700 with the founding of the *Kurfürstlich-Brandenburgische Societät der Wissenschaften*. Moreover, Leibniz was eager to inspire colleagues in other countries to follow suit. He was also personally involved in the establishment of academies in Vienna, Saint Petersburg, and Dresden.

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5 For the translation, see Forssell (1883, p. 143).
Benzelius was probably also inspired directly by the French Académie des sciences and from the British Royal Society. He had visited each of them and corresponded with several of their members. In his capacity as university librarian, he made contact with the French abbé Jean-Paul Bignon in 1708. He was president of l’Académie des sciences and led the publication of Le Journal des sçavans. In that capacity Bignon wrote to colleagues in other countries, including Benzelius, to elicit reports and scientific findings. In that way no fewer than eight Swedish reviews appeared in the French journal in 1709 (Clarke, 1973, p. 218; Eriksson, 1979, pp. 115-118, 121-128 and Ekenvall, 1951, pp. 146-152).

As for the Royal Society, it should have served as an example by dint of its practical interests (Hildebrand, 1939, p. 91 and Liljencrantz, 1940, p. 49). Contacts were also already in place with Britain through Benzelius’ brother-in-law, Emanuel Svedberg, who wrote in letters home in October 1710 that he was reading Isaac Newton’s works every day (Hildebrand, 1939, p. 90).

Benzelius also found inspiration closer to home (Forssell, 1883, p. 278; Schück, 1918, p. 3 and Liljencrantz, 1939, p. 308). It was the Danish clergyman, subsequently bishop, Søren Lintrup, who had founded Societas litteraria indagantium in Copenhagen in 1705.6 However, Lintrup’s society was short-lived, having expired after a brief time owing to lack of participation (Bricka, 1896, p. 413). Our own Society might have met a similar fate if Eric Benzelius the Younger had not worked determinedly to sustain and develop activities. After all, following a number of recorded meetings in the spring of 1711, the gatherings ceased after the summer. Nevertheless activities continued in the form of letters between the members, with Benzelius as the cohesive force. After Emanuel Svedberg returned from London in 1715, publication of the journal Dædalus Hyperboreus was launched, which is considered the country’s first academic journal. It appeared in six issues from 1716 to 1718. It contained accounts of various inventions and discoveries, primarily by Polhammar, who was referred to in the preface to the first issue as “our Swedish Archimedes” (Forssell, 1883, p. 294).

1.3. Reorganization

At the same time as journal publication got underway, Benzelius was forced to recognize that the original circle of members had been decimated. Per Elvius and Harald and Johan Wallerius had passed away, while Göran Wallerius and Johan Upmark were working elsewhere. Besides Benzelius him-

6 Lintrup lived from 1669 to 1731. He was professor of elocution 1707-1716, professor of theology 1716-1720, and bishop of Viborg 1720-1725. In the latter year he returned to Copenhagen as court chaplain and professor of theology (Engelstoft & Dahl, 1938, p. 86). See also Pedersen (1951, pp. 47-48, 103, 112 and 155).
self, that left only Olof Rudbeck, the Younger and Lars Roberg among the original eight members. The solution was thus to increase the number of members and expand the scope. The extended organization, which seems to have had Leibniz’ Prussian universal academy as a model, was given the name of Bokwettsgillet (Guild of Book Learning) or Societas Literaria. Its charter was adopted on 26 November 1719, less than a year after the death of Karl XII. This occasion saw the induction of Pehr Martin and Erik Burman, both subsequently professors, Master Johan Billmark, and Erik Benzelius’ younger brother and later professor at Lund Henrik Benzelius. With time other members were elected, including Anders Celsius, who was first inducted as amanuensis but was later promoted to secretary. After a few years abroad, he came to be the driving force within the Society.7

In its first few years, Bokwettsgillet held between 30 and 40 meetings per year, and a number of different issues were addressed. One important task for the members was to determine the contents of Acta Literaria Sueciae, which had been established in 1720 with the German Acta Eruditorium Lipsiensia and the French Le Journal des sçavans as models (Forssell, 1883, p. 324 and Schröder, 1845, p. 6). The purpose was to provide accounts of and to review “what bookish arts regarding the Land of our Fathers have appeared through Printing; what new and useful is being worked upon; some findings of Truth from the Sciences and History; and when learned Men die, their lives and writings” (Dunér, 1918, p. 32). Tasks were distributed among members, who were all obliged under the charter to make active contributions. Although the clause appears never to have been applied to any great extent, the charter made it clear that absence from three meetings in a row without a reasonable excuse would be interpreted as meaning that the member wished to be expelled (Dunér, 1910, p. 33 and Prosperin, 1791, p. 17).

The Bokwettsgillet continued to strive to achieve recognition as an association of a higher order. Benzelius thus wrote to Parliament in 1723 regarding privileges that might render some income to the Bokwettsgillet. Once again inspired by Leibniz, he requested almanac privileges in Sweden. Parliament denied this request. On the other hand, permission was granted to dig up and sell the pig-iron pipes that had been laid from Uppsala Mill to Uppsala Castle in the days of Queen Christina to supply it with water. This sale yielded 9,000 daler of copper coin. They were also granted a franking privilege for both domestic and international destinations (Forssell, 1883, p. 299 and Dunér, 1910, pp. 30-39).8

An important reason that they needed income was that they felt they should have an astronomical observatory. This project had advanced to a stage where they performed an inspection of the round towers of Uppsala Castle, which had burnt down in 1702, to determine whether they could set

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7 Regarding the Bokwettsgillet, see also Lindqvist (1984, pp. 130-133).
8 The international franking privilege was rescinded in the 1780s (Schröder, 1845, p. 8).
up the observatory there. These plans never reached fruition, however, and it was not until 1741 that Anders Celsius’ observatory, which can still be seen on Saint Peter’s Square (S:t Pers Torg), was ready for use (Prosperin, 1791, pp. 40-41 and Lindroth, 1976, p. 128).

In other words, it is evident that the first years of the Society were arduous, which is a circumstance she shares with other learned societies and indeed with academic institutions. Legitimacy was needed in order to attract resources. When the application for the almanac privilege was denied and Benzelius himself was appointed bishop of Gothenburg in 1726, he sought a new way to develop the Bokwettsgillet. Before he left Uppsala in August 1721, he proposed, once again inspired by the Berlin academy, that they elect a number of influential individuals as members of the Society and that one of them be selected as Praeses Illustris. And they did so. In this way Councillor of the Realm Arvid Horn came to be named head of the Society. Moreover a number of prominent men were inducted: Chancellery Councillor Carl Gustaf Tessin, President of the Board of Trade Daniel Niklas Höpken, President of the Legal, Financial, and Administrative Board Otto Reinhold Strömfeldt, Chancellery Councillor Johan Henrik von Kocken, and Councillor of Mining Adam Leijel (Dunér, 1910, pp. 39-40). In other words: they adjoined to themselves prominent individuals in order to gain a better understanding in leadership circles for their ideas and their activities.

In parallel with these inductions, they also discussed the matter of elevating the learned society to a Royal Society. It was discussed whether meetings should be held in Stockholm, at least occasionally. Benzelius supported the idea, but the majority went against him. The ultimate result was a royal decree on 11 November 1728: “that the Crown imparts upon said Society the name of Societas Regia Litteraria et Scientiarum, with the intent that the Crown shall always have the same under Its protection” (Dunér, 1910, pp. 40-43 and Schröder, 1845, p. 9).

But the issue of the orientation and seat of the Society was nevertheless not taken off the agenda. When Captain mechanicus Mårten Triewald was elected a member of the Society in the autumn of 1729, he wrote to the Praeses Illustris rather soon afterward to propose radical changes to the Society’s activities. He argued that its activities should be moved to Stockholm, that the number of members should not be limited, and that they should publish in their native language. His letter generally exudes considerable contempt for universities and a highly utilitarian attitude. Of course, his epistle was not well received in Uppsala. The ideas in his letter came to be realized instead in the founding of the Royal Swedish Academy of Sciences by Triewald together with others in 1739. (Hildebrand, 1939, pp. 159-165 and Lindqvist, 1984, p. 269).

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9 For a report from Leijel to the Society in September 1721, see Lindqvist (1984, pp. 132-133).
1.4. Early Activities of the Society

In terms of the activities pursued during the first few decades, we can establish that the minutes kept during 1711 have a great deal to say about building construction. At the first recorded meetings it is established that windows should not be placed too low, that swampy sites should be avoided, that flat and not jagged cornerstones should be used, that mortar is stronger if horse dung is mixed into it, etc. It is also noted that “beer brewed in winter withstands sourness longer than that brewed in March” (Minutes 24 January 1711 in Dunér, 1910, p. 62). Later in the spring the attention turns more towards scientific instruments, and Emanuel Svedberg reports that he can see “the manner and means of how instruments are distinguished and how they are examined” (Minutes 10 July 1711 in Dunér, 1910, p. 66).

Within the Bokwettsgillet members’ interests were even broader than in the Collegium Curiosorum. Members discussed humanities subjects such as rune stones, orthography, and translations. In medicine it was for instance the matter of bleeding vessels and embalming, while natural science took up eclipses, improvements of the calendar, earth magnetism, and the reproduction of eels and other fish. There was a great interest in practically useful knowledge. They thus addressed subjects such as cattle-raising, flax from nettles, salt dressing, the prevalence of precious metals in Sweden, canal construction, steam engines, iron foundries, and the finishing of tobacco pipes (Dunér, 1910, pp. 34-36).

In their manner of working the Collegium Curiosorum and the Bokwettsgillet were very similar to their sister organizations in other countries. But these manifest efforts to develop practically usable knowledge in academies also came to be criticized. One well-known example is Jonathan Swift’s satire of the Royal Society in Gulliver’s Travels, when Gulliver, in his third journey, visits the grand academy in Lagado. In its many rooms Gulliver encounters a large number of bizarre characters with the most remarkable projects. One of them is described as follows (Swift, 1726, Part III, Chapter 5):

In another apartment I was highly pleased with a projector who had found a device of ploughing the ground with hogs, to save the charges of ploughs, cattle, and labour. The method is this: in an acre of ground you bury, at six inches distance and eight deep, a quantity of acorns, dates, chestnuts, and other mast or vegetables, whereof these animals are fondest; then you drive six hundred or more of them into the field, where, in a few days, they will root up the whole ground in search of their food, and make it fit for sowing, at the same time manuring it with their dung: it is true, upon experiment, they found the charge and trouble very great, and they had little or no crop. However it is not doubted, that this invention may be capable of great improvement.
1.5. Concluding Remarks

It is possible to joke about our utility-minded academic predecessors and their notions. But what would we be today without them? What would we be without Benzelius, Polhem, Celsius, and Linnaeus? In fact, how are we doing with our own attempts at finding practical applications? Nowadays it is called Mode Two Research, Triple Helix, or strategic initiatives and is part and parcel of national research policies in most countries. With their limited economic resources, our predecessors provided an important foundation for future knowledge and prosperity. Standing on their shoulders, we have been able to see further.

This brief account of the advent of the Society in 1710 and its life up to the end of the 1720s leads up to a few key observations. We have seen what a laborious task the foundation of new organizations entailed, with great risks during the early years. It has also been made clear that a crucial role was played in the emergence and survival of persevering enthusiasts like Eric Benzelius the Younger. Through persistence and a successive anchoring in the international academic community and leading circles within the country, he managed to move the Society forward. We are exceedingly grateful to him for his pioneering efforts, enabling us today to celebrate this Tercentenary of Sweden’s oldest learned society, which, in its regular meetings, carries the torch for the notion of the fruitfulness of the exchange of ideas among representatives of diverse academic disciplines.

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