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Swedish Scientific Expeditions to Spitsbergen, 1758-1908

At the suggestion of his mentor Linnaeus, Swedish scientist Anton Rolandsson Martin (1726-88) travelled as a passenger on a whaling voyage to the Arctic in 1758. This article examines briefly the achievements of Martin's expedition and how it became established as the pioneering forerunner of Swedish scientific expeditions to the Arctic during the nineteenth century. Going on to describe these subsequent expeditions, which took place up to and including the early years of the twentieth century, the extent to which Swedish scientific activity in the Arctic moved away from the scientific ideals of Martin's and Linnaeus's time to reflect other ambitions and international spheres of interest in the region is also examined. The historical 'narrative' that was latterly constructed with regard to Swedish scientific activity in the Polar Regions over the course of one hundred and fifty years is also investigated, as well as the extent to which Martin's expedition was referenced and revered in retrospect.

The destination of the whaling vessel on which Anton Rolandsson Martin obtained a free passage was the sea area around a group of islands then known as Spitsbergen; the name changed in 1920 to Svalbard, a Norse reference in Saga literature to a "cold coast". Situated in the High Arctic to the north of Norway, Spitsbergen

was discovered and named by the Dutch explorer Willem Barentsz in 1596, in the course of a Northeast Passage expedition searching for a new trade route to China. The gradual geographical discovery of the region is charted in various maps published during the seventeenth century, at a time when the Netherlands led the world in cartographical terms. The first is Barentsz's own map, which incorporates "Het nieuwe land". Dutch cartography is in fact almost certainly the first instance of scientific activity relating to the Arctic. Territorial claims by Britain and Denmark were successfully contested by Holland, advocating the principle of a *mare liberum* (broadly defined as free international access to a maritime area for trading purposes), and Spitsbergen itself remained a *terra nullius*, or no man's land until 1920, when Norway was awarded sovereignty of the region in the aftermath of the First World War.

An extensive whaling trade was carried on in the Spitsbergen region during the seventeenth century, until hunters were forced to move away from the coastal region because of the depletion of the whale population and changing ice conditions during the whaling season. Whaling continued in subsequent centuries, but in a more contained fashion, and over a broader area.

In the autumn of 1756, in his mid-twenties, Anton Rolandsson Martin began to study botany – at that time considered an important adjunct to the study of medicine – in Uppsala, under the tutelage of Linnaeus, who also procured a stipend for him. Martin flourished academically – he is quoted as observing that "he [Linnaeus] praised me not a little among his other disciples" (Nordström: 94) – and only two years later Linnaeus suggested that Martin should undertake an expedition to "nordpolen" (Martin: 102 – this term was used far less specifically during the eighteenth century) to collect specimens of nature. As well as encouragement from Linnaeus – who is described in the opening sentence of Martin's expedition diary as "chief physician [actually "archiatern", an

archaic term denoting medical status] and knight, Linnæus” (Martin: 102) – Martin received a grant from the Kongl. Vetenskaps-Akademien (Swedish Royal Academy of Sciences) and co-operation from Svenska Grönlandska kompaniet in Göteborg, where the voyage began. The ship travelled up the west coast of Spitsbergen to approx. 80°N, but due to the ice conditions encountered, Martin was able to spend only two hours ashore. Although he was unable to contribute anything of note to the region’s natural history, Martin took a lively interest in everything he encountered on the voyage, making detailed observations about sea and ice conditions; the anatomy of the whale; the process of its pursuit and how it was then rendered down; sea birds; meteorological observations at sea; and water temperatures, taken using a thermometer lent to him by the Royal Academy. In his diary, Martin displays a passion for the importance of knowledge in its own right, for the goal of adding to the sum of human knowledge. The purity of this idealistic perspective was shared by other individuals involved in Arctic science until well into the second half of the nineteenth century. The diary reveals another facet of Martin’s character that is also typical of his era: a devout belief in the power of the Almighty and a perception of nature as an illustration of God’s powers. The expedition’s safe deliverance from the threat of storms or sea ice, for example, was attributed not to the skill of the mariners, but to the mercy of God.

Upon his return to Sweden, Martin was inspired by the writings of the Danish former Bishop of Bergen, Erik Ludvigsen Pontoppidan, to pursue botanical studies in Norway during the summer of 1759. Pontoppidan’s *Forsøg paa Norges Naturlige Historie* had been published in Copenhagen in 1752, and from its full title it is evident that he, too, advocated scientific study in its most extensive form: a “Survey of Norway’s Natural History, presenting this Kingdom’s Air, Ground, Mountains, Waters, Metals, Minerals, Stone-varieties,

Animals, Birds, Fish and finally the Nature of its Inhabitants, as well as their Habits and Way of Life” (Pontoppidan 1752; my translation of full title).

Martin’s travels to Norway took him to Trondheim, where he would almost certainly have had contact with Bishop Johan Ernst Gunnerus, one of the main founders of Det Trondheimske Selskab the following year, in 1760 (this later became Det Kongelige Norske Videnskabers Selskab), whose *Flora Norvegica* was published between 1766 and 1776. Martin then spent a year in Bergen, during which time he corresponded with Linnaeus, before returning to Sweden in the autumn of 1760. He embarked on his medical studies early in 1761, but later that year became ill with a fever and contracted gangrene, which resulted in the amputation of his right leg in February 1762. This circumstance seems to have affected neither Martin’s faith in God, nor his scientific energies. Later that same year he is reported as having said:

I shall live like an old and honest student all my days and use the time remaining not unfruitfully for my own pleasure in quietly contemplating my fortunes, and according to my humble insights doing what I can in the service of the sciences. ... God grant me good fortune in this! (Nordström: 96)

With the help of intermittent financial support from the University of Åbo and the Swedish Royal Academy of Sciences, Martin appears to have done just that for the remaining two decades of his life.

Martin’s expedition to Spitsbergen preceded distinguished Swedish scientific expeditions to the region during the nineteenth century. At this later stage, Martin came to be quoted in retrospect as the forerunner of these expeditions, and his expedition diary was published, strategically, almost a century after his death.

In 1837, by which time the Union between Sweden and Norway

had been established, another Swedish scientist, Sven Lovén, embarked on an expedition to Spitsbergen, chartering a passage on a Norwegian walrus-hunting vessel under the auspices of the Royal Academy of Sciences. He returned home with significant zoological and geological collections, convinced of the importance of polar science. Lovén encouraged Otto Martin Torell to undertake expeditions to Spitsbergen in 1858 and 1861, so to that extent he was a more direct forerunner than Martin of the Swedish scientific expeditions to the polar regions which took place over the following six or seven decades. (Factual information relating to these and other Arctic expeditions in this article is taken from Holland 1994, unless otherwise stated.)

Otto Martin Torell's expedition to Spitsbergen of 1858 was self-financed, comprising studies of the region's zoology, geology, glaciers and moraines, and a programme of dredging for zoological specimens, as well as collections of botanical and fossil plants. The geologist Adolf Erik Nordenskiöld accompanied Torell on both this and a subsequent expedition in 1861, which was financed by the Swedish Government and others, and which additionally included meteorological observations, as well as a preparatory survey of the Hinlopen Strait and geodetic surveys (measuring land using applied mathematics to determine the figures and areas of large portions of the Earth's surface). These surveys later gave rise to the Swedish-Russian arc of meridian expeditions on Spitsbergen of 1898-1902 – expeditions where very precise latitude and longitude measurements were combined with topographical work to try to determine the nature of the Earth's shape near the North Pole. These results were then used to build up an overall picture of the Earth's surface.

From 1864 and for the following twenty years, Adolf Erik Nordenskiöld led a series of Swedish scientific expeditions to various Arctic locations. The primary aim of his 1864 expedition, financed

by the Swedish Government and supported by the Royal Academy of Sciences, was to conduct preliminary surveys for the measurement of an arc of meridian on Spitsbergen, as well as zoological and botanical research. Nordenskiöld also sighted and named the westernmost island of Kong Karls Land (afterwards called Svenskøya).

Swedish scientists – and later Norwegian scientists as well – became notorious for imposing their own place-names and in the process supplanting those which already existed. There are Dutch place-names dating back to the seventeenth century: Hinlopen Strait has already been mentioned; other examples include Barentsøya, Amsterdamøya, Smeerenburg, Van Mijenfjorden and Wijdefjorden. A few, but by no means all of these are attributable to specific individuals. Compare this to a much stronger tendency for Swedish place-names to celebrate an individual's association with the Arctic: Torell Land, Dicksonfjorden, Nordenskiöldbreen, Andrée Land and Oscar II Land. This insistent renaming of locations on a Swedish theme – more specifically, a theme usually relating directly to the Swedish scientific expeditions – resulted in the region's existing place-name history becoming obscured and this should be perceived, on some level at least, as a territorial act. It is also worth noting the status and influence of Swedish scientific expeditions compared with Norwegian hunting expeditions that were taking place at this time. The latter were commercial voyages, which nevertheless made geographical discoveries on occasion, such as Elling Carlsen's sighting in 1859 of what would be called Svenskøya from 1864 onwards, not to mention its sighting by another Norwegian, Erik Eriksen, six years earlier in 1853. The Norwegians lacked status in place-naming terms at this time (since their expeditions resulted in the sale of walrus and seal products, plus bears and fish, rather than in the creation of new maps), and the authenticity of their discoveries was therefore given less credence.

Thor B. Arlov, the author of the most comprehensive modern history of Svalbard, comments that “during the 1864 expedition, Nordenskiöld wanted to make a dash for the north – the thought of a Farthest North record was just as enticing for him” (Arlov 1996: 179; my translation). Nordenskiöld’s next expedition to Spitsbergen, in 1868, was scientific, but with the additional aim of penetrating the waters north of Spitsbergen as far as possible, and on this occasion he did attain a new Farthest North record for a ship of 81°42’N, beating Scoresby’s record of 81°30’N achieved 62 years earlier, in 1806. Nordenskiöld’s achievement seems to have unleashed a subsequent international desire to keep improving upon this Farthest North. It certainly spurred Nordenskiöld himself on to greater polar ambitions. His next Arctic expedition, to Greenland in 1870, was primarily to investigate the suitability of Greenland dogs for a proposed attempt on the North Pole, but also to explore the inland ice on Greenland, which at that time was almost completely unknown. This was the first of Nordenskiöld’s expeditions to be sponsored by Göteborg businessman Oscar Dickson, who was to finance all of the explorer’s subsequent Arctic ventures.

In 1871-1872, prior to Nordenskiöld’s attempt on the North Pole via Spitsbergen a year later, the scientist turned explorer became briefly involved in politics as well when, at Nordenskiöld’s initiative, the Swedish Government made a diplomatic request to be granted sovereignty of Spitsbergen – a request which was eventually rejected by Russia (cf. Mathiesen: 20-30). This lack of political success was exacerbated by the failure of Nordenskiöld’s North Pole expedition via Spitsbergen. The aim was to overwinter there and venture north in the spring of 1873. Severe ice conditions, trapping the two Swedish vessels which had brought the expedition to Spitsbergen, forced 67 men to share provisions over the winter which had been intended for the 22 main expedition members. The

North Pole aspect of the expedition was also defeated by the fact that all but one of the reindeer ran away. However, continuous meteorological and magnetic observations were made, and the expedition achieved the first crossing of Nordaustlandet.

From this point onwards, Nordenskiöld focused his Arctic endeavours in another direction altogether. In 1875, he explored the Kara Sea Route for the first time in order to conduct scientific observations in the Kara Sea and demonstrate the feasibility of sea-borne transport between Europe and Siberia. The voyage to the Yenisey River was successful, but in order to prove the commercial potential of the route on a year-on-year basis Nordenskiöld undertook a second voyage the following year, with trade goods on board a vessel named *Ymer* (after the founder of a race of frost giants in Norse mythology). Finally, in Nordenskiöld's 1878-1880 expedition, sponsored by King Oscar II of Sweden and Norway and by merchants Oscar Dickson and Aleksandr Sibiryakov, the first successful navigation of the Northeast Passage was achieved, sailing from Europe to the Bering Strait. Nordenskiöld's achievement represented the conquest of the first of what I term the "polar prizes" – the others being the Northwest Passage, the North Pole and the South Pole – which had been the aim of so many explorers, including Willem Barentsz, ever since the sixteenth century. Nordenskiöld's success inspired the foundation of the Svenska Sällskapet för Antropologi och Geografi, which published the first issue of its journal – once again, this took the name of *Ymer* – in 1881. Almost a third of the first issue of *Ymer* was taken up with a biographical note on Anton Rolandsson Martin and the first publication of his 1758 Spitsbergen expedition diary, which until that time had been stored in the Swedish Royal Academy of Sciences' archives (Nathorst: 91-101, Martin: 102-141). The publication of Martin's diary at this point seems to be intended as a form of pedigree and historical background for Swedish Arctic achievements

that followed after his time. The significance of Martin's expedition was reinforced in the 1909 issue of *Ymer*, when about one-third of that edition was devoted to a section entitled "Swedish Explorations in Spitzbergen 1758-1908", incorporating a "Historical Sketch" (published in English, which was without precedent in *Ymer*), as well as a "Swedish Spitzbergen bibliography" and "Swedish Spitzbergen maps until the end of 1908" – coinciding with the one hundred and fiftieth anniversary of Martin's expedition (Nathorst *et al.*).

Nordenskiöld's final involvement in an Arctic expedition was in 1883, at the conclusion of the first International Polar Year in 1882-1883, 125 years prior to IPY 2007-2008, the International Polar Year currently in progress. In his expedition to determine whether the Greenland ice cap covered the whole of the interior, and to seek traces of ancient Norse settlements on the east coast of Greenland, as well as conducting scientific studies, Nordenskiöld was joined by a geologist called Alfred Gabriel Nathorst. During the first summer of the International Polar Year, Nathorst had jointly led a Swedish geological expedition to Spitsbergen with another new-generation Swedish scientist, Gerard de Geer. Both men subsequently demonstrated an ongoing scientific commitment to the Arctic for the rest of the nineteenth century and into the first decade of the twentieth century.

At this time there was intense international interest in the as-yet-unclaimed polar prizes, reflecting a spirit of nationalism that was then prevalent. There were several attempts to attain the North Pole using new technological developments. Fridtjof Nansen's *Fram* expedition of 1893-1896 was an attempt to traverse the Arctic Ocean in a ship designed to ride up over the sea ice instead of being crushed by it; Swedish engineer Salomon August Andrée's planned hot air balloon expeditions of 1896 and 1897 involved launching *Ørnen* from the north-west of Spitsbergen to fly over the

North Pole; Admiral Makarov of the Russian Navy commanded *Yermak*, the first icebreaker to venture into the Arctic seas in its expeditions of 1899 and 1901. None of these expeditions reached the pole, but in each case there was considerable discussion in the European geographical journals of their day about how they represented a way forward in North Polar exploration terms.

Salomon August Andrée's expedition of 1896, when he failed to launch his hot air balloon, provided transport facilities for a geological expedition by Gerard de Geer to NW Spitsbergen. In the same year, Alfred Gabriel Nathorst became the editor of *Ymer*, allowing him considerable control over the nature and focus of information concerning the Arctic that was published in this journal. Andrée finally launched his balloon from Danskeøya (NW Spitsbergen) in 1897, but it never reached the North Pole; the fate of the expedition did not become known until 1930, when its remains were discovered in the vicinity of Kvitøya. Because the fate of the expedition members remained unknown for so long, the Swedish Government was forced to initiate and finance several attempts to discover their whereabouts, in much the same way as the British Government spent enormous sums of money trying to trace the whereabouts of Sir John Franklin's 1845-1848 Northwest Passage expedition for years afterwards. Thus, Nathorst undertook a scientific expedition to Spitsbergen in 1898, when there was still at least a possibility that Andrée and his expedition members might still be alive somewhere in the Arctic. The location of Nathorst's expedition to Greenland in 1899, however, although it encompassed a scientific programme, was also in order to search for Andrée. The style and content of Nathorst's extensive accounts in *Ymer* during this period of his own Arctic expeditions and those undertaken by others frequently hark back to the glory days of earlier Swedish Arctic exploration, perhaps in an attempt to divert attention from the more ambiguous achievements of contemporaneous expedi-

tions.

Meanwhile, the Academies of Science in Stockholm and St. Petersburg had reached an agreement to measure an arc of meridian over about four degrees of latitude on Spitsbergen. This idea had initially been set in train by Otto Martin Torell's expeditions to Spitsbergen of 1858 and 1861. The initial leader of the Swedish expeditions was the scientist Edvard Jäderin, who led a preliminary expedition to Spitsbergen in 1898. Two overwintering expeditions in 1899-1900, funded by the Russian and Swedish Governments, were led by Jäderin (focusing on the northern half of Spitsbergen) and by Feodosiy Nikolayevich Chernyshev (focusing on the southern half of Spitsbergen); in addition, the Russian party was accompanied by Gerard de Geer in 1899 only. Ice conditions in the region meant that the Russian party had substantially completed their work by the spring of 1900, whereas two further Swedish expeditions (led by Gerard de Geer in 1901 and by T. Rubin in 1902) were required before the project was finally completed. The Swedish expeditions incorporated substantial surveying work, which it is difficult to dissociate entirely from national territorial ambitions at this time. Nonetheless, the international ideal of adding to the total sum of knowledge regarding the form of the Earth cannot be disputed as far as this series of expeditions is concerned.

The death of Adolf Erik Nordenskiöld in 1901 and the additional expense involved in the completion of the arc of meridian expeditions by 1902 coincide with a shift of focus and financing in Sweden with regard to expeditions to the Polar Regions. The first Swedish expedition to the Antarctic, led by Nordenskiöld's nephew Otto Nordenskjöld, took place in 1901-1904, following the lead of Adrien de Gerlache's Belgian Antarctic Expedition of 1897-1899 as the first purely scientific venture to this part of the world. (Factual information relating to these and other Arctic expeditions in this article is taken from Headland 1989.) The Swedish expedition coin-

cided with British, German and Scottish polar expeditions heading south instead of north, of which only one – Robert Falcon Scott's *Discovery* Expedition – was actually aiming for the South Pole.

In 1908, Gerard de Geer resurrected the tradition of Swedish scientific expeditions to Spitsbergen, continuing the geological and topographical surveys of Isfjorden that he had begun in 1896, and carrying out hydrographical and zoological surveys in the same area. Scientific expeditions from Sweden continued on an annual basis thereafter, though led by other scientists. These may have been triggered by the annual visits by Norwegian scientists to the region from 1906 onwards, in the immediate aftermath of Norway's independence from Sweden. Spitsbergen had become a crowded place during the first decade of the twentieth century, with the development of coal-mining interests in Longyearbyen and elsewhere, German fisheries expeditions in Spitsbergen waters, and the growth of large-scale tourist activity in the region, which had already been developing during the final decade of the nineteenth century. Perhaps it would be unrealistic to imagine that this part of the Arctic, or indeed the world as a whole at that time, could any longer be an environment for scientific ideals. It is certainly the case that scientific activity on Spitsbergen prior to the decision to award sovereignty to Norway in 1920 was geared fairly specifically to national territorial and commercial ambitions. Incidentally, a Dutch parallel here might be the publication in 1919 – and in English – by the Netherlands Ministry of Foreign Affairs and the Royal Dutch Geographical Society of a beautifully-illustrated book entitled *The Dutch Discovery and Mapping of Spitsbergen (1596-1829)*.

One interesting exception to the rule of nationalism and territorialism is to be found on occasion in the writings of the British explorer Sir William Martin Conway, a renowned mountaineer who conquered the Alps and the Himalayas before taking on the chal-

lenge of Spitsbergen. As a Professor of Art History, Conway's academic specialization was in sixteenth-century Dutch paintings, and his facility for investigating Dutch archive sources is evident in the comprehensive history of Spitsbergen he wrote entitled *No Man's Land*, published in 1906. Conway's scientific perspective is unique among Arctic explorers: he had academic standing but was not a scientist; however, his expedition members included highly-qualified geologists and the like. In Conway's account of his 1896 expedition, *The First Crossing of Spitsbergen* (1897), he perceives a link between scientific activity and tourism in the region that was ignored or rejected by other writers of his time. His comment that "[t]he interior of Spitsbergen ... is now to be brought within ten days of London, and opened for investigation to any person with a six weeks' holiday at command" (Conway 1897: 343) was a call to arms for university students and academics to assist in the acquisition of further geographical and general scientific knowledge in this part of the Arctic – not unlike the Linnaean principle of dispatching disciples to far-flung locations in order to increase the sum of scientific knowledge. Conway went further, claiming that what might be termed a 'tourist gaze' was essential to continued scientific enquiry in the region, just as a commercial focus on the Spitsbergen region had been essential to Martin's scientific expedition of 1758:

No one will assert that the minute knowledge we now possess of the great Alpine range would have been attained if the playground of Europe had been located elsewhere. [...] a public has been provided to take an interest in Alpine science, which but for them would scarcely have come into being. The same thing will happen to Spitsbergen if summer travellers can be persuaded to frequent it. (Conway 1897: 342-343)

The focus of any expedition to Spitsbergen – or to the Polar

Regions as a whole, or indeed to anywhere in the world – generally encompasses one or more aims of science, exploration, territorial claim and commerce. In practice, these different elements flow into one another and it can be extremely difficult to differentiate between them. In the case of early Arctic expeditions, commercial ambition, exploration and territorial claim were usually integral elements that were often indistinguishable – not least as far as the expedition members themselves were concerned. Prior to the mid-eighteenth century, voyages of exploration were undertaken only by trading vessels. Commercial interests lay at the very heart of every chartered voyage to Spitsbergen, though it was not uncommon for sailing instructions to sanction exploration within and beyond the region if the opportunity presented itself: this authority could be assumed by a ship's captain if circumstances during a voyage proved favourable. It might even be the main or sole purpose of the voyage for one or two ships accompanying other company vessels to the region during a particular season: as early as 1556, the English Company sent out a “vessel, merely destined for discoveries” (Forster: 272). Nevertheless, trade and exploration generally amounted to one and the same thing.

In conclusion, Anton Rolandsson Martin's expedition of 1758 was pioneering, in that he appears to have been the first traveller to the High Arctic regions whose sole purpose was that of scientific enquiry. That in itself is remarkable; what is also noteworthy is the way in which Swedish scientists over a hundred years later (particularly A. G. Nathorst), editing and contributing to their national geographical journal, on at least two occasions constructed a historical narrative, bestowing on Martin's expedition and scientific findings a status that does not bear too-detailed investigation. This is evident from the predominance of Martin's 1758 expedition in the inaugural issue of *Ymer* (1881) and his role as the inaugurator of Swedish explorations in Spitsbergen in the chronicle published 150

years after his expedition (*Ymer*, 1909).

Looking at the chronological progression of Swedish expeditions to Spitsbergen over this 150-year period, it is evident that scientific enquiry developed from the eighteenth-century scientific ideal of adding to the sum total of human knowledge, and from Martin's passion for science generally – also taking into account the circumstances of his expedition, which made it almost impossible for him to pursue his particular interest in botany – to the specialization of scientific focus that was already apparent in Sven Lovén and Otto Martin Torell's expeditions. Adolf Erik Nordenskiöld's Arctic expeditions from the early 1860s to the early 1880s demonstrate a progression from a purely scientific focus, to exploration (discovering and naming *Svenskøya*; achieving a new Farthest North; the attempt on the North Pole), to territorialism (replacing original place-names with Swedish ones in newly-published maps; seeking Swedish sovereignty of Spitsbergen), to commercial interests (transporting trade goods to Siberia; creating a new trade route through the Northeast Passage).

Swedish Spitsbergen science encompassed new spheres of interest at the very end of the nineteenth century, including technology (e.g. *Andrée's* hot air balloon expedition) and geodetic surveying (used in the arc of meridian expeditions). Sweden's more or less consistent scientific interest in Spitsbergen over a period of fifty or sixty years wavered, crucially, for just five years at the beginning of the twentieth century. Within that period of 1903-1907, however, American and British coal-mining interests became established in the region and this precipitated international recognition that the region's *terra nullius* status would have to be resolved sooner or later. International scientific expeditions led by Albert I, Prince of Monaco, with Norwegian and Scottish scientists among the expedition members, further contributed to the subsequent ongoing 'invasion' of this Swedish scientific territory.

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RECENSIES

