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Recruitment for Swedish scientific expeditions in the heroic age of exploration

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Research Article

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Abstract

This article examines recruitment practices in Swedish polar expeditions during the late 19th and early 20th centuries, focusing on A.G. Nathorst's Arctic voyages 1898 and 1899, the Swedish-Russian Arc-of-Meridian surveys 1898–1901, and the 1903 Antarctic rescue expedition. Drawing on preserved correspondence, this article explores who conducted recruitment, how it was done, and what competencies were sought. The expedition leader recruited other scientists on his own, relying on recommendations from fellow academics. Hiring of sailors involved several persons; the leader, the ship's captain, other seamen and semi-professional commissioners. The default mode was to re-hire old shipmates. When that was not possible, new recruits were evaluated through acquaintances or based on their reputation. Experience of travel in icy waters was considered valuable. Sailors with references from scientific expeditions were especially sought after, and could use this to attain higher wages than was the norm in ordinary work at sea.

Introduction

It is well known that the great expeditions to Antarctica, especially during "The heroic age of exploration" (1897–1922), attracted large numbers of applicants. Shackleton writes in *South* that he received almost 5000 applications. He does not say anything about how he handled these, how he chose who was suitable as expedition members, but seems to assume this to be part of what he calls "to the general reader, unimportant affairs" (Shackleton, 1919, preface). Thousands of people also applied to join Scott's expedition with the *Terra Nova*, although it seems unclear more precisely how many applications there were (Jones, 2003). Scott's second-in-command on the expedition, Edward Evans, wrote that they tried to choose fairly and that many who were suitable were rejected in favour of those who had previous experience of polar regions (Evans, 1921). There is no collection of sources that can shed light on why some were selected and others were excluded, and the applications themselves are mostly lost.

The diversity of the recruitment process is evident from texts published by or about participants. Some applied, some were recommended, some were asked. The process seems often to have been somewhat casual. Three examples must suffice. Shackleton's interview with meteorologist Leonard Hussey was, according to Hussey, a matter of Shackleton looking at him and pronouncing "Yes, I like you. I'll take you" (Fisher & Fisher, 1957, p. 313). Scott chose to bring a nearsighted young man who had studied classics and modern history to the Antarctic because he, Apsley Cherry-Garrard, was highly regarded by Scott's friends, had granted funds for the expedition despite his application being turned down, and seemed like the right kind of man (Wheeler, 2002). Frank Debenham, an Australian geologist, was recruited based on recommendations, but wasn't interviewed until the expedition reached Melbourne on route to Antarctica. The interview consisted of Debenham being asked what he regarded as a few irrelevant questions. Sarah Airriess, who notes the rather odd ways in which recruitment was done, describes the hiring of Debenham as "a slipshod way of screening someone for an expedition" (Airriess, 2022, p. 186).

It is difficult not to get the impression that recruitment could be a somewhat haphazard affair, neither based on rational criteria nor of evaluation of formal merits. Nevertheless, it seems to have worked, and Airriess goes on to note that "CV and references can speak to their work, and the medical appraisal will speak for itself, but character you can only ascertain in person" (Airriess, 2022, p. 186). Fisher & Fisher, while acknowledging that the recruitment process seems strange, also notes that though there were more qualified meteorologists than Hussey, his qualities made him a valuable asset and "the apparently casual mode of selection worked out extremely well" (Fisher & Fisher, 1957, p. 313). Thomson, also noting the many and sometimes strange ways in which men were recruited by Scott, writes that 'the total contribution of the scientists was outstanding, not just in terms of academic work, but in sledging, marching and sustaining morale" (Thomson, 1977, p. 150). Many more elaborate and formalised recruitment processes have been less successful.

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The expeditions and the sources

It would have been marvellous to see how staff were selected on expeditions with several thousand volunteers, but the British expeditions lack sources that can answer such questions in a general way. There are some Swedish scientific expeditions, smaller in terms of personnel and ambition, and with less iconic stature, which are relatively well documented in terms of applications and correspondence about recruitment of expedition members. Thus, they can shed light on the reasoning behind accepting or turning down an application, on who made these decisions and on what qualifications made someone attractive to hire.

Swedish expeditions have mainly targeted the Arctic. The North, and especially Spitsbergen, was of great scientific interest in the second half of the 19th century. By 1910, over 30 expeditions had left Sweden to study the area (Liljequist, 1993; Sörlin, 2002; Wråkberg, 1999). Professor Alfred Gabriel Nathorst, geologist, botanist and palaeobotanist, had participated in three expeditions to the Arctic when he organised two research voyages of his own. In 1898 he set out to circumnavigate Spitsbergen, and 1899 to investigate Jan Mayen and the Nort Eastern coast of Greenland. The planning of both of Nathorst's expeditions is well documented in his archives at the Centre for History of Science at The Royal Academy of Sciences in Stockholm. They contain letters of application as well as correspondence with and about potential expedition participants.

The Swedish-Russian Arc-of-Meridian surveys 1899–1902 aimed to investigate the curvature of the Earth, but other research was also carried out during the summers the project was in progress at Spitsbergen. The Swedish expeditions were led by the geodesist and astronomer Edward Jäderin in 1898–1900, by the geologist Gerard De Geer in the summer of 1901, and by the geodesist Tryggve Rubin in the summer of 1902 (Wråkberg, 2002). The material relating to the recruitment of participants is not complete, and is scattered among several archival institutions, including the Swedish National Archives and the Centre for the History of Science in Stockholm.

The material from Otto Nordenskjöld's scientific expedition to Antarctica in 1901 is kept at the University Library of Gothenburg, but only a few letters relating to the recruitment of personnel have been preserved. Nordenskjöld's expedition was stranded in three different places in Antarctica, and when concern about his fate spread in Sweden, a Swedish rescue expedition was organised in 1903. This was intended as a there-and-back-again journey. The mission was to find Nordenskjöld and his companions and bring them home, not to conduct scientific investigations. However, in order not to completely loose opportunities for study, a zoologist joined the party and the crew included people with knowledge of cartography and of carrying out certain scientific observations. The expedition was initiated by Nathorst and De Geer, who also ensured that Parliament granted funds for the enterprise. Captain Olof Gyldén of the Royal Swedish Navy was appointed leader of the expedition and was responsible for acquiring a ship, equipping it and manning it (Elzinga, Nordin, Turner & Wråkberg, 2004; Lewander, 2003). Gyldén kept a very orderly archive, including a detailed register of incoming and outgoing correspondence including copies of letters he sent himself. This is kept at the National Maritime Museum in Stockholm.

The expeditions that offer the best sources for answering the questions of this study are thus the two led by Nathorst in 1898 and 1899, and the Antarctic rescue expedition in 1903. The Arc-of-Meriduan surveys and Nordenskjöld's expedition are of interest primarily in that they can provide further understanding of networks and reasoning about recruitment.

The expeditions had in common that they went to icy waters, that they required ships to be equipped and manned, and that they were staffed by both scientists and seamen. Only Nordenskjöld's Antarctic expedition and one of the Arc-of Meridian surveys included planned over-wintering, but all the expeditions were equipped to cope with such a possibility if necessary. This was also written into the contracts of the employees. However, no wintering was needed. Both of Nathorst's expeditions and the main part of the surveying work were carried out during the summer months. The Antarctic rescue expedition, which incidentally arrived in Antarctica shortly after Nordenskjöld's evacuation with the help of a ship from Argentina, was away from Sweden between August 1903 and April 1904.

The enlisting process

None of the expeditions mentioned advertised positions, nor were there written criteria for qualifications needed. Expedition plans were presented at lectures and published in scientific journals, after which newspapers all over Sweden published such plans as news. Newspapers also reported on the expeditions while they were in progress. The journalistic judgement was obviously that research and exploration was of great public interest. Scientific voyages were thus well known in advance to anyone who could follow Swedish news, something that was not limited to people within the borders of Sweden. All expedition leaders were contacted by people from other countries, by Swedes living abroad, or by other nationalities following Swedish news.

The largest category of personnel in all these expeditions was sailors, men who are often anonymous in scientific reports, news items and more popularised accounts of the expeditions. Some expeditions used only navy men, others only civilian seamen, and sometimes – as in the Antarctic rescue expedition of 1903 – sailors from the Royal Swedish Navy worked alongside men from the merchant fleet. The Arc-of-Meridian survey expeditions involved several ships, some provided and manned by the navy, others civilian. Finding out who was in the crews is not easy, and in the case of the Arc-of-Meridian surveys it has proved impossible to get a complete picture of the individuals manning the ships. The seamen had, however, important roles to fulfil on board the ships and ashore. Not only did they manoeuvre the ship, sometimes in unfamiliar, stormy and icy waters, keep it in good condition, and ensure that food and fresh water were available. Their duties also included assisting with scientific work. When soundings, bottom scrapings and plankton harvesting were carried out, it was not only the scientists who took part in the work. On shore excursions, for example to carry out geological studies, map areas or set up measuring points, sailors also took part. The expedition reports do not generally mention these men by name. Instead, they say for example "H. von Zeipel and two men were left there with tent, equipment and food" (*Rapporter till Kongl. Kommittén för gradmätning på Spetsbergen öfver den svenska gradmätningsexpeditionens arbete* 1901, p. 9), or "Kjellström had with three men started hiking around the western plateau in order to measure and map it . . . " (Nathorst, 1900, p. 261). I will pay most attention to this category of expedition participants, the sailors, partly because it is the largest, partly because it is the group whose recruitment is discussed most extensively in the sources. It should be recognised, however, that my interest in them also stems from the fact that it is a group of expedition participants that deserves more attention than they have previously received.

The scientists

At the outset, however, something should also be said about the scientists. They were in a minority in all the expeditions, and they are also the group of people who have made the least impression in the sources regarding their recruitment. There are few applications from scientists – only 19 such applications in a total of over 100 – and they are not much discussed in the correspondence preceding an expedition. This is probably because the academic community in Sweden was small. Although the expedition leader did not know all the promising young men in botany, geology or meteorology (and most were young when they joined their first expedition), he was in a good position to get recommendations from his senior colleagues as to who would be suitable. Those who applied by letter without being recommended by some academician, were not selected as participants.

To get a better picture of how scientists were recruited to expeditions, it would be fruitful to carry out a network analysis of their contacts at universities, museums and within organisations such as the Royal Swedish Academy of Sciences and the Swedish Society for Anthropology and Geography. The historian of ideas Sverker Sörlin argues that a scientific centre emerged in Stockholm at the end of the 19th century, where the combination of Stockholm University, museums, organisations, trade and industry fertilised each other in a way that was not possible in the traditional university towns. Nathorst, De Geer and Gyldén were all based in Stockholm. Sörlin has also pointed out that it would be interesting to further investigate the recruitment of scientists, their social networks, their intentions in participating in expeditions, and how, or if, these laid the foundations for a future academic career (Sörlin, 2002, 1996). I share this view, but such an investigation is beyond the scope of this study and requires a much broader source material than that directly linked to the expeditions. Therefore, only a few examples are given here.

In 1898, when he was 24 years old, the botanist Johan Gunnar Andersson wanted to join Nathorst's expedition to Spitsbergen. Andersson, who had no experience of the Arctic at the time, began by writing to another professor he knew, outlining in his letter the research work he wanted to carry out during the expedition (Andersson, 1897). This man then put Andersson in touch with Nathorst, who was given Andersson's letter and research plan. Nathorst thus got a scientist with reliable recommendations and with a well-developed plan for investigations during the expedition. This first major trip in scientific fieldwork started Andersson on a life of travel in search of new knowledge. He went on his own expedition to the Arctic in 1899 and accompanied Nordenskjöld to Antarctica, before leaving polar research to work on archaeological and geological investigations in China (Romgard, 2018).

The Antarctic rescue expedition also provides an example of how contacts were used, albeit in a different way. As mentioned, this was not planned as a scientific expedition, but certain investigations were to be carried out anyway. When funds were sought from Parliament, this was formulated by Nathorst and De Geer as:

> Still, it would be beneficial to make room for a zoologist, in case such a person would be willing to contribute economically to the expedition, and provided that this would not cause the same expedition any extra expenditure. (*Kungl. Maj:ts nådiga proposition till Riksdagen om anslag för en undsättningsexpedition till Södre Ishafvet; gifven Stockholms slott den 1 maj* 1903, s. 8).

No names were mentioned here, but the zoologist who had already been accepted to accompany the expedition was Baron Axel Klinckowström, associate professor of zoology at Stockholm University, wealthy enough to pay his own way, and brother-in-law of the expedition ship's captain Olof Gyldén. Klinckowström himself described that Gyldén, over an evening grog at his home in Stockholm, asked if the Baron wanted to come along. He did, but participation also required the approval of the scientific community. Klinckowström, again according to his own account, had both enemies and friends there, but since one of the friends was Nathorst, permission was granted under the conditions described in the proposal (Klinckowström, 1933). There is no reason to doubt Klinckowström's scientific competence, and he himself had experience of expeditions in the Arctic. However, it must be noted that his participation here was an example of nepotism – incidentally, a phenomenon that in literal translation from Swedish is called 'brother-in-law politics." Lewander notes that there was a debate both about including a scientist at all and about the fact that a zoologist was chosen, but there seems not to have been any public discussion of how the choice was made (Lewander, 2003).

The zoologist in Nathorst's (1898) expedition, Axel Ohlin, provides another example of how academics were recruited. Ohlin was considered a very talented scientist, but had a well-known drinking problem. An expedition leader thus had to weigh Ohlin's competence as a scientist against the social, and perhaps medical, problems his participation could cause. In addition, Ohlin had difficulty getting things done, which meant that articles and reports tended not to be produced according to schedule (Jorikson, 2016). By the time Ohlin was recruited by Nathorst, he had already participated in two scientific expeditions, one to the Arctic and one to Patagonia. Ohlin was recommended to Nathorst by a professor at Lund University, Nathorst's own Alma Mater. Nathorst chose to employ Ohlin in return for a promise that he would stop drinking (Jorikson, 2016). According to Andersson's memories of the expedition, this promise was not completely fulfilled (Andersson, 1944), but Nathorst was still prepared to give Ohlin a second chance. This time too, it was on the recommendation of other professors, but Ohlin declined anyway, since he had obtained a permanent position at the University of Bergen (Ohlin, 1899a,b). Nathorst then turned to a professor in Uppsala to get suggestions for other zoologists. He now needed to recruit two, since not only Ohlin but also the other zoologist from the 1898 expedition had decided not to participate again, in order to plan his own trip to the Arctic the following year. Nathorst's colleague replied that the one he considered most suitable was unable, and that the second best was unwilling. Therefore, he recommended a third option (Tullberg, 1899).

Sörlin's question as to whether it was always easy to recruit scientific personnel for the expeditions can be answered in the negative by this example. We know that Nordenskjöld also found it difficult to recruit scientists for his expedition to Antarctica, something Lewander believes was due to the fact that the project was underfunded, and that it was unclear for some time whether it would materialise at all (Lewander, 2002). The researchers who participated in expeditions, often fairly young men, had to weigh the value of the trip against the opportunities offered at home, the prospect of new research against a permanent position with a steady wage. Those with permanent positions needed to apply for leave of absence, which was not always granted. In addition, there may well have been competition for staff between expeditions. During the last three years of the 19th century, at least five expeditions went to the Artic from Sweden, and there were also expeditions led from other countries.

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Who recruited?

As seen above, it was the expedition leader alone who recruited scientific staff. It has been traditional in Sweden for the expedition leader to be a scientist. The exception here being Gyldén, but he was put in charge by Nathorst and De Geer on what was not mainly supposed to be a scientific endeavour. Gyldén had captained the main ship under De Geers leadership in the Arc of Meridan surveys in 1901, and was also personally acquainted with scientific circles. His father was an astronomer and, like Nathorst and De Geer, a member of the Royal Academy of Sciences. In addition, as mentioned earlier, his sister was married to the zoologist Klinckowström. After Gyldén was appointed captain, his duties included procuring a ship, equipping it and recruiting the crew. He mainly did this himself, although some applications and recommendations came his way via Nathorst. Gyldén was allowed by the government to fill some of the places on the ship with men from the Royal Swedish Navy, but was not given permission to take the entire crew from there.

Normally the expedition leader was not someone with seafaring experiences, other than as participant onboard. Nathorst's expeditions were civilian and he needed to acquire ships, captains and sailors on his own, without using naval personnel. He started by recruiting a captain, who could then help him acquire a ship and assist in manning it. The captain Nathorst chose was very well qualified. Emil Nilsson had been captain during Adolf Erik Nordenskiöld's expedition to Greenland in 1883, and had travelled and wintered in the North Ice Sea four times before that. Nilsson and Nathorst got to know each other during the 1883 Greenland expedition, and two years later, well in advance of the 1898 expedition, Nathorst contacted Nilsson to ask if he wanted to be captain on a new trip (Nilsson, 1895).

Nilsson was captain on a route in the Mediterranean when he took up the assignment, and later worked with equipping the ship in Norway and on the Swedish west coast. Nathorst was in Stockholm. This rendered a large number of letters between them, sometimes even more than one a day. The correspondence between them shows that they shared the tasks prior to the expedition, which Emil Nilsson often described as "our expedition." For many of these tasks Nilsson must have been more suitable than Nathorst, something the latter obviously realised. Nilsson oversaw the ship´s refit and equipping, from big things like construction of cabins and research facilities to tobacco, spirits, tablecloths and napkins. He even spent thought and time on details like purchasing a mirror whose frame matched a portrait of the king. Nilsson was also deeply involved in the recruitment of sailors, and he advised on such matters in the following year when he handed over as captain to Nils Forsblad, the first mate of 1898. People who actively applied for the expeditions wrote to Nathorst, who discussed their merits with Nilsson and with others that could make assessments. Nilsson used his network of contacts in the shipping industry to recruit staff who were not actively applying. Nilsson gave Nathorst recommendations on the skills and personal qualities he wanted in the crew, as well as approving or advising against individuals suggested by Nathorst. For example, Nilsson advised Nathorst that a fist mate ought not to be only theoretically trained but also a practical sailor (Nilsson, 1898a) and that an able seaman should be around 30 years old and have ten years' experience on sailing ships: "don't take anyone with too little experience" (Nilsson, 1898b).

Engineers were also involved in recruitment. Once they had been hired, it became their task to appoint stokers. Although it was formally the captain or expedition leader who approved the choice, in the three expeditions where documentation is extensive, the decision was in fact left to the chief engineer. Ivar Petersson, who was chief engineer on the 1898 expedition, returned to the post in 1899. At that time, the previous year's stoker had also contacted Nathorst and applied to rejoin the crew. Petersson told Nathorst that he was in favour of the old stoker joining again "as he did his duty well during last year, I would be happy to have him on board" (Petersson, 1899). Gyldén also delegated the task of recruiting stokers to the chief engineer:

> As to the stokers recommended by You, I will gladly take those You wish for. / . . . / I have deliberately not engaged any, since I wanted the engineer to choose his own stokers' (Gyldén, 1903a).

The chief engineer had previously served with Gyldén on the 1901 surveying expedition, possibly also on commands within the Swedish navy, and enjoyed so much confidence that he was also asked to comment on the person considered as second engineer: "If you think he is competent and would find his company pleasant, do ask him to apply for leave of absence" (Gyldén, 1903b). Captain Nilsson even told Nathorst twice that they had better leave recruiting of stokers to the engineer (Nilsson, 1898b,c). Unfortunately, Nilsson soon dismissed the engineer who had been hired, as he was not considered to have sufficient interest in his work. This meant not only that the expedition needed to find a new engineer, but also that they now found it hard to get stokers in Gothenburg, since "The Engineer I had to fire has now talked so badly about our expedition that it is impossible for me to find any stoker here" (Nilsson, 1898d).

How to recruit?

The default setting for anyone manning an expedition was to re-emply staff with whom they had previously worked successfully. This is hardly surprising. It would, to put it bluntly, have been stupid to overlook someone who was competent, had experience, and had been an appreciated colleague. We also know that such a selection strategy was used by British expeditions. Frank Wild, for example, describes in *Shackleton's Last Voyage* that the Boss first recruited a core of men who had previously served with him (Wild, 1923). The Swedish material also contains a large number of individuals, both scientists and sailors, who served on expedition after expedition. Nathorst reused as many as possible from the 1898 expedition during the next year, both scientists, officers and crew. Gyldén began his work on manning for the 1903 expedition by asking fellow officer Axel Blom, who had been Gyldén's second-in-command during the 1901 Arc-of-Meridan survey and who had also served with him in their regular naval posts. This was done even before the expedition had actually received the official go-ahead, which Gyldén also made clear in his letter to Blom (Gyldén, 1903c).

Gyldén's other recruitments also started with well-known names. He made a list of men he had previously worked with and contacted them. Not all of these contacts are documented in the register – they must not have been contacted by letter – but enough remains to show that he began by recruiting acquaintances. Gyldén wrote to the engineer from the 1901 surveying expedition "I am glad to see that the Engineer have applied for a leave of absence, since I always prefer to sail with old shipmates" (Gyldén, 1903a). To others he wrote that he was pleased that they wanted to go to sea with him again, and told them which other of their old shipmates were coming along. When Emil Nilsson was asked to captain

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Nathorst's expedition in 1898, he said yes, both because he longed to return to the Arctic and because he wanted to sail with old friends again (Nilsson, 1895). Not only the leader, but also the crew seemed pleased to reunite with former shipmates.

The situation with regard to the Arc-of-Meridan surveys is less clear, since the preserved correspondence is scarce. From what is available, however, it seems common that those who had previously participated were interested in being recruited for the next expedition, and that they in turn were interesting to the expedition leader. The material includes four seamen, an engineer and a mate who had participated during the summer of 1898, and had their confidence renewed for the 1899 voyage. This is not to say that they necessarily joined, since as men from the navy they had to apply for a leave of absence from their ordinary duties. Otto Nordenskjöld asked Johan Menander for help in contacting the engineers from Nathorst's expeditions, in the hope that he would be able to employ them on his expedition (Menander, 1901). The ship used by Nathorst, *Antarctic*, was bought by Nordenskjöld to use in Antarctica. Recruiting people who had participated in these voyages would therefore involve both experience of travelling in icy seas and knowledge of the specific ship and its engine room.

It has been argued that at this time, maritime trade had become so extensive and international that previous personal knowledge of sailors' merits and shortcomings had started to play a lesser role (Kirby & Hinkkanen, 2000). However, in this particular context, specialized maritime operations in the service of science and in icy waters, personal references still were important. When studying relationships between Polar medallists, Dartnall noted that "The Antarctic community, particularly during the heroic age, was a very small one" (Dartnall, 2022, p. 2). Considering how many more people moved within the Arctic calling it a small community might be an exaggeration, but still lots of those who participated in scientific expeditions were recurring participants. Many more either knew each other or had shared previous shipmates. Contacts within the seafaring community clearly mattered.

All expeditions also required the recruitment of new personnel, men who were not previously known. Neither Nathorst, Captain Nilsson, nor Gyldén was inclined to take applicants' merits for granted. Instead, they made an effort to conduct inquiries by letter about potential participants. Nilsson and Gyldén naturally had contacts within the maritime world, and if they did not personally know the qualities of an individual sailor, they often knew someone else who did, as we have already seen in Gyldén's recruitment of the second engineer and stoker. In 1898, Nilsson was able to dismiss a proposal for an engineer because he had heard from the man's former commander that he, although a respectable person, was neither pleasant nor particularly enterprising (Nilsson, 1898a). Ahead of the 1899 expedition, Nilsson discussed a new captain with Nathorst and suggested several different names, considering various combinations of captains and officers, and regarding them as more or less suitable due to known merits and characters (Nilsson, 1899a).

Expedition leaders also had to rely on acquaintances from outside those immediately concerned to assess someone's suitability. Two examples of this can be found in Nathorst's correspondence. For the 1898 expedition, newly graduated mate Johan Menander wanted to join. His stepfather had long ago studied with Nathorst in Lund, and now used this old acquaintance to inquire about a position for the young man (Bundy, 1898). The letter also included certificates and a medical report. Nathorst sent an inquiry about Menander to the head of the navigation school, who summarized his impressions by stating that Menander was considered the top student in his class, came from a good home, had a pleasant demeanour, and was healthy, cheerful, and confident (Wallenstrand, 1898). Nathorst also asked Nilsson, who did not know Menander personally, but answered that with strong recommendations and good grades, they could hire the young man. Due to his relative inexperience, though, Nilsson recommended that Menander should serve as "jungman," the lowest grade of sailor in Sweden, with a maximum wage of 40 kronor per month (Nilsson, 1898e). Nathorst took his advice. Menander performed his duties satisfactorily and was promoted to second mate during the following year's expedition. By then he had also passed his captain's examination and was trusted enough to answer Nathorst's questions about the suitability of other candidates. Menander was also recruited for Nordenskjöld's Antarctic expedition but instead chose to join the Baldwin-Ziegler expedition, where he advanced further to captain (Capelotti, 2016; Larsson, 2011). Gyldén then recruited Menander as first mate on the Antarctic rescue expedition, also using him to provide advice on personnel recruitment and ship selection.

In 1899, Nathorst once again turned to the navigation school for advice on the suitability of two applicants. One received only praise and was hired without hesitation. The other, despite being considered more talented by the school's teachers, was noted to appear pale and having a sunken chest. The teacher remarked that he "does not really look as if he would stand hardship very well" (Wallenstrand, 1899). This concern prompted Nathorst to inquire about the applicant's health with acquaintances of the man's family, as well as with Menander, who knew him from navigation school. Once Nathorst was reassured that there was no history of lung disease in the family and that the applicant's pale complexion was likely due to dedication to his studies, he too was hired (Menander, 1899; Ribbing, 1899a,b).

An expedition leader could also rely on more or less professional recruiters, such as shipowner and shipbuilder G.D. Kennedy in Gothenburg. Kennedy served on the boards of the shipping company Svenska Lloyd and the Ship Captains' Association, and he could suggest suitable candidates to man ships (Murray, Svensson, & Palmqvist, 2016). He also likely had the ability to advocate for sought-after personnel at Svenska Lloyd to be granted leave to participate in expeditions. Gothenburg was also home to Ernst Andrée, who acted as a recruiter for both Swedish and international expeditions. Several individuals mentioned in the source material were recruited through him for Baldwin-Ziegler's polar expedition. Expedition leaders seeking Norwegian sailors they did not personally know turned to the shipbroker Andreas Aagard in Tromsø. He was involved in recruitment for both of Nathorst's expeditions, the Arc-of-Meridian surveys and the Antarctic rescue expedition. Swedish press described him as the well-known "ombudsman" for polar expeditions (The *Hvar 8 dag*, Gothenburg, October 8, 1899). Between 1814 and 1905, Norway was in a reluctant union with Sweden. There is no reason to believe this had had a negative effect on the willingness to recruit Norwegian sailors, nor is there anything to suggest that Norwegians avoided Swedish service (Drivenes & Jølle, 2006). The only apparent impact on the expeditions under discussion was that Gyldén chose not to use Nansen's and Sverdrup's ship *Fram* for the rescue expedition, considering it inappropriate to purchase and risk a Norwegian national symbol on a trip to Antarctica (Lewander, 2003).

Shipping offices in Sweden were used for personnel recruitment mainly when the possibility of recruiting through personal contacts or semi-professional recruiters had been exhausted. Two days

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before the crew was to be registered in Gothenburg for the 1898 expedition, Captain Nilsson wrote to Nathorst, requesting that he try to recruit two additional sailors by contacting the "ombudsman" at the Stockholm Shipping Office (Nilsson, 1898d). Among the professional associations for seafarers that existed in Sweden at the end of the 19th century, for professions like engineers, mates, sailors, and stokers, only the steward association was involved in the recruitments examined. This occurred either when the expedition leader or the ship's captain consulted the steward association for suitable candidates, or when the association proactively reached out to facilitate contact with an interested applicant.

What skills were in demand?

Sea-ice navigation

Experience from previous expeditions in Arctic waters was, unsurprisingly, a significant asset for a sailor. Many of those hired for the expeditions had formal education, such as navigation school with mate- or captain certifications, but practical experience seemed to be valued more highly. Captain Nilsson warned Nathorst against selecting a mate who was more theoretical than practical (Nilsson, 1898a), and argued that Menander as a newly graduated mate had so little experience that he could only accompany the expedition as the lowest rank of sailor (Nilsson, 1898e). When Adolf Erik Nordenskiöld planned his 1883 expedition to Greenland, he compiled a list detailing the crew's prior experience in icy waters. Not all of them had previous experience, but a core group of sailors had years of sailing, sometimes including wintering, in Arctic waters (Merit- och avlöningslista för Grönlandsexpeditionen, 1883). Those new to such tasks gained experience under the leadership of Sweden's most renowned explorer at the time, thereby becoming even more attractive to employ. Recruiting sailors with such experience does not seem to have been particularly difficult, as Arctic waters were familiar territory for many seamen from Sweden and Norway. The waters around Antarctica were not considered to require different skills, at least not according Captain Gyldén, who stated in an interview before departure:

> Finally, we asked captain Gyldén if he knew these southern seas: No, I don't, he said quickly. But ice is ice. And by the way, the ice is less dangerous around the South Pole than in the north. Well, perhaps the ice bergs are more dangerous down there, but the currents are trickier in the North Ice Sea. In short – ice is ice. (The *Dagens Nyheter*, Stockholm, 6 August 1903)

Thus, Gyldén valued experience with ice, but saw no reason to specifically seek out men who had been to the southern polar regions. Ice experience alone was sufficient and played a key role in recruitment. The record among the men whose credentials I have reviewed is held by the Norwegian Hans Haslum. When he joined Nathorst's expedition in 1898, he had already made 24 voyages to the North Ice Sea, both as a hunter and whaler, and as a participant in scientific expeditions. His journey with Nordenskjöld to Antarctica in 1901 was his 28th expedition in icy waters. Haslum's experience was remarkably extensive, but he was accompanied by many others with similar qualifications. For Nathorst and the leaders of the Arc-of-Meridian surveys, such sailors were essential recruits as ice pilots, mates, and hunters. Not because these expeditions aimed to engage in whaling or sealing for commercial purposes, but because occasional catches could be of scientific interest.

There is a perception that Norwegian hunters and whalers were sometimes passed over due to the higher costs of employing them. They generally earned more than sailors from Sweden (Djerw & Kaijser, 2000; Lewander, 2003). The average earnings for whalers and hunters in regular work, catching seals, whales, walruses, fish, polar bears, reindeer, and collecting bird down, ranged between 80 and 150 kronor per month during the years 1880–1905 (Tromsø Skipperforening 1929). Therefore, if an expedition leader wanted experienced Norwegian crew members, they had to offer sufficient pay to make it worthwhile for them to leave their regular occupations. Wages and benefits were a matter of negotiation, either directly with the expedition leader or via intermediaries such as Aagard in Tromsø. Skilled individuals, like Haslum, knew their worth and could chose assignments (Haslum, 1899a,b,c). This also applied to Swedish sailors with extensive experience and strong qualifications. They too could only be recruited if good wages and conditions were offered.

Hynninen, Ojala, and Pehkonen (2013) have examined wage levels for Swedish seamen, and in comparison to their findings, wages for the expeditions discussed here were generally far above average. This can partly be explained by the fact that crews on steamships earned better than those on sailing ships, and all the expeditions discussed here used steamships. Furthermore, voyages outside the Baltic Sea were better compensated than those closer to home. However, the differences are so significant that they also reflect the cost of experience and the expeditions' willingness and ability to pay for it. During Nathorst's 1899 expedition, the chief engineer, who had prior Arctic experience, earned 200 kronor per month at a time when the average salary for his profession in Sweden was just under 100 kronor. Haslum, who then served as first mate, received 150 kronor, compared to the Swedish average of around 50 kronor, but in line with what Norwegian seamen earned in their ordinary jobs. Second mate Menander, with far less experience than Haslum, was paid 100 kronor. Considering that he had received 40 kronor the previous year, and had been employed as the lowest rank of sailor, this is a considerable rise in status as well as pay. The only crew member whose salary in 1899 was in line with the Swedish average was the youngest and least experienced participant (Average wage data from Hynninen, Ojala, & Pehkonen, 2013). When applying for the 1903 rescue expedition, Menander reported that his most recent salary as first mate, when employed by the Baldwin-Ziegler expedition, had been 200 kronor (Menander, 1903a). The engineer in 1903, another experienced individual, though less so than Menander, requested and received 140 kronor per month, plus a 150 kronor clothing allowance, free onboard accommodation, and a life insurance (Persson, 1903). These were significantly better conditions than the average working terms for sailors. The types of benefits routinely provided by expeditions, such as clothing, equipment, free accommodation, life insurances and, at least on Nathorst's expeditions, free tobacco, were not usually standard (Ojala, Frigren, & Eloranta, 2014).

Even though ice experience was highly valued and worth paying for regardless of the seaman being Norwegian or Swedish, there was also a perception that Norwegian whalers were difficult. De Geer, who led the 1901 Arc-of-Meridian survey, claimed that Norwegian sailors were a superstitious lot, and unsuitable for scientific work. His view likely stemmed from what must be described as a mutiny in the summer of 1899 when several Norwegians aboard one of the expedition's ships refused to work unless they received better provisions (*Sveriges Sjöfartstidning*, Gothenburg, September 21, 1899). One reason De Geer wanted Gyldén to lead the rescue expedition was that he was a no-nonsense individual who reasoned in an educated manner, something De Geer explicitly said distinguished him from Norwegian sailors (*Dagens Nyheter*, Stockholm, May 9, 1903).

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However, Gyldén himself does not appear to have developed any aversion to Norwegian sailors as a group, and most Swedish expedition leaders, including Nathorst, Nordenskiöld, and Nordenskjöld, highly valued their expertise. The fact that Gyldén did not hire any Norwegian sailors for the Antarctic rescue expedition seems to be primarily due to timing. The two who applied did so only after all for them relevant positions had been filled. The rescue expedition was assembled in an exceptionally short time, just three months. Kolbein Ellefsen, who had participated in Borchgrevink's wintering at Cape Adare, and Oluf Raanes, who had served as mate on *Fram* under Sverdrup's command applied, and must be regarded as eminently qualified. Gyldén told Raanes that he would gladly have had him on board, but that the positions suitable for his competence were already filled (Gyldén, 1903d). Raanes could have been offered a place as ordinary seaman, but Gyldén likely considered him overqualified and realised that he would not accept such an offer. Furthermore, Gyldén was not desperate to get Norwegians. For Gyldén, as for Nathorst in 1899, the skills possessed by them was not indispensable. If others on board had sufficient knowledge of navigating ice, they could opt to do without. When Gyldén recruited first mate Menander, who had experience from both of Nathorst's expeditions and from Baldwin-Ziegler's and second mate Bergendahl, who had also participated in Baldwin-Ziegler, he saw no need to hire an ice pilot. Additionally, several other crew members had prior Arctic experience. Captain Nilsson reasoned similarly when advising Nathorst on staffing in 1899: With experienced Arctic sailors as first and second mates, "there is no need to recruit a Norwegian whaler" (Nilsson, 1899a).

Scientific interest

Familiarity with Arctic waters was a valuable qualification, but having experience specifically from scientific expeditions was even better. Dag Avango, in his dissertation on Swedish mining ventures in Spitsbergen, explains how the combination of Norwegian fishermen and hunters' practical knowledge and scientists' theoretical expertise laid the foundation for future exploitation of Arctic resources (Avango, 2005). Avango mentions a Norwegian fisherman-farmer from Tromsø, who informed scientists about coal deposits in Spitsbergen. He independently collected plant fossils, studied geological strata, measured ocean depths, observed vegetation, and conveyed his findings by letter to Nathorst (Avango, 2005).

Swedish coastal inhabitants also assisted research efforts. In Chydenius's description of Otto Torell's 1861 expedition to Svalbard, he refers to a man from the Swedish west coast who had previously travelled with Torell to Iceland and Greenland and was described as 'truly belonging more to the participants than to the crew' (Chydenius, 1865, p. 17). These sailors can be seen as a parallel to the equally often invisible guides, assistants and lay correspondents who helped scientific discoveries in northern Sweden during the 18th and early 19th centuries (Avango, 2005; Sörlin, 2002). There has been a long tradition of non-academics assisting in academic work, and apparently doing this not simply for money but for curiosity and interest. In an interview, a captain of a cargo ship assisting the 1899 Arc-of-Meridian survey stated that he contributed to the scientific work during the expedition, and that he had personally brought back a collection of plants, lichens, stones, and parts of Andrée's balloon house. He intended to donate the collection to one of the educational institutes in Visby (The *Gotlands Allehanda*, Visby, 20 January 1900).

Emil Nilsson's appointment as captain in 1898 was likely not solely due to his experience in icy waters, but also because he had previously participated in several scientific expeditions. He thus knew what was needed in terms of ship, equipment and staff. When applying for the Arc-of-Meridian survey, some candidates highlighted their experience in assisting with scientific work and their interest in such tasks (Helge, 1899; Nilsson, 1901). In a recommendation for a young sailor, an acquaintance of Nathorst's noted that, beyond navigation school, the young man had "enough of an education to be of assistance to the scientist" (Ribbing, 1899c). Scientific competence was also attractive for officer positions. The first and second mates on the 1901 expedition conducted meteorological observations every four hours (Thorén, 1978). The first mate was invited to join Nordenskjöld's Antarctic expedition, but instead accompanied Gyldén on the rescue expedition, where he had similar responsibilities.

When Hans Haslum first wrote to Nathorst to apply for participation in the 1898 expedition, he included a letter from a Danish professor explaining that Haslum was more useful than most sailors since he had both an interest in and experience of collecting natural specimens (Haslum, 1898a). The contract between Nathorst and Haslum explicitly stated that he was to assist with scientific work, including sounding, dredging, and other relevant tasks (Haslum, 1898b). Nathorst later recommended Haslum in similar terms for the 1899 Arc-of-Meridian survey (Nathorst, 1898). Other sailors received recommendations from Nordenskiöld and Sverdrup and corresponded with Swedish scientists about observations related to Andrée's missing expedition, as well as sharing their own theories about his fate. Norwegian sailor Isak Isaksen is one such example. He had served with Nordenskiöld and other explorers since the 1870s, and as ice pilot when Andrée went to Spitsbergen in 1896. In 1898 Isaksen wrote to Nordenskiöld, addressed as "his old friend," to express a wish to join Nathorst's expedition. At the same time, he developed his own ideas regarding the whereabouts of Andrée and his men (Isaksen, 1897). Nilsson approved of Nathorst's decision in 1899 to rehire both engineers and the cook, as they were competent and "interested in the matter" (Nilsson, 1899b), i.e. the purpose of the expedition. It seems unlikely that the cook or the engineers went ashore to actually assist in scientific work, but they too could feel that they were part of the common purpose of the expedition, and such a feeling was considered a good thing.

At this time, sailors were often perceived as part of the lower class, as potentially disruptive elements in society. However, in coastal communities where seafaring had been a profession for generations, they were considered entirely respectable (Kirby & Hinkkanen, 2000).

In the published diaries of Norwegian captain Carl Anton Larsen's voyages in the Southern Ocean, an English visitor expressed surprise at being able to discuss art, music, and literature with the sailors (Larsen, 2016). Today, we might not find it surprising that men with little formal education, such as was likely the case for the average sailor, could still be intellectually curious and capable of self-study. Even less surprising is that such individuals, possessing a kind of dual expertise, were attractive recruits for scientific expeditions.

It appears that among both Swedish and Norwegian sailors, some specialized in joining scientific expeditions, perhaps because it aligned with their personal interests, perhaps because it was better paid. Haslum seems to have been one such person, as were Menander and Bergendahl. With recommendations from Nathorst, Menander later secured a position as commander of the Swedish

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Hydrographic-Biological Commission's vessel. Both he and Bergendahl continued corresponding with Nathorst about collections they made during their voyages. Bergendahl participated in an international conference on polar studies in Brussels in 1906 (Larsson, 2011). Further research might shed more light on scientific Arctic seafaring as a distinct career path for sailors and further highlight their contributions to the academic world of the time.

Social competence and good health

Two additional factors considered in the hiring process for expedition personnel were physical health and social competence. That these aspects were crucial enough to leave traces in historical records is hardly surprising. It is well known that working in the Polar regions is demanding on both body and mind, even today. H.R Guly has noted that the psychological challenges of modern-day polar work was known and handled, more or less efficiently, during the heroic age of exploration too. As mentioned, most of the Swedish expeditions were planned as summer ventures, and thus there were no day round darkness to stand, unless misfortune struck, but other potential psychological hazards were relevant to consider for the expedition leader, such as interpersonal conflicts; little irritations that might grow into something worse (Guly, 2012a). In summer, expeditions to the Arctic operated in waters frequented by others; permanent residents, temporary fishermen, hunters, tourists, or members of other scientific expeditions. But even when things proceeded as planned, participants were essentially confined to each other's company for months, requiring them to get along and ideally enjoy working together. Sailors faced similar conditions also in their regular work. They couldn't simply return home at the end of the day to escape difficult colleagues. That seafarers have historically valued virtues such as camaraderie, strong work ethic, and a sense of fun is hardly surprising (Kirby & Hinkkanen, 2000). Considering candidates' personalities was therefore a logical aspect of the recruitment process. Today, many recruitment processes make use of formal psychological screening, while others rely on the same methods used by the expedition leaders in the past – they talk to people and get references as to their personality. Guly notes that leaders like Mawson, Shackleton and Evans wrote about the value of a cheerful disposition, an even temperament and moral quality (Guly, 2012a).

Nathorst, Nilsson and Gyldén were apparently looking for the same qualities, as were those who recommended staff to them, perhaps due to their own experiences. Admiral Palander, who had extensive Arctic experience from Nordenskiöld's *Vega* expedition, recommended a young officer as more practical than theoretical (probably intended as praise), and as someone who spread a sense of ease and camaraderie (Palander, 1897). Explorer Sven Hedin suggested a navy captain whom he considered both highly competent and very congenial (Hedin, 1899). One person was described as a "budding gentleman" while another was noted as someone who would make pleasant company on board. Social competence, moreover, was not only discussed in relation to sailors. When a professor recommended younger colleagues for Nathorst's expedition, their demeanour seemed just as important as their scientific qualifications. One man was described as "nice and decent and easy to get along with, though his personality is far from the pleasant and genuine impression given by the two others" (Tullberg, 1899).

Individuals with a poor reputation, whether due to incompetence or an unpleasant demeanour, were not selected. As we have seen, recruitment was primarily based on either firsthand experience with potential participants or recommendations. Gyldén's lists of applicants included notes on conduct, such as "Good behavior," "Bad conduct," or even "Dismissed because of bad behavior." An engineer whom Nathorst considered hiring in 1898 was ultimately rejected after Captain Nilsson's inquiries revealed that, while the man was diligent, he was not agreeable in his manner (Nilsson, 1898a). Menander offered similar advice to Gyldén when he considered a man who had served with Menander on the Baldwin-Ziegler expedition: "I do not regard him suitable to join the expedition, since he, according to me, had a most un-gentlemanly behaviour towards Baldwin and the crew" (Menander, 1903b).

Expeditions had a job to accomplish, and that work required physical endurance. Consequently, the health of potential participants was an important concern for expedition leadership. Captain Gyldén regularly requested medical certificates for candidates to the 1903 rescue expedition. Recommendations for potential sailors often included assurances that they were in good health, strong, capable sportsmen, and accustomed to hardship. We have already seen how Nathorst inquired about the health of the individual described by his teacher as pale and having a sunken chest, ensuring that he did not have tuberculosis or any other concerning ailment. Norwegian Arctic veteran Kulseth had prior experience wintering in Spitsbergen during a Swedish meteorological expedition in 1882–1883. His competence was unquestioned, but Aagard still saw fit to reassure Nathorst about his physical condition: "Kulseth is 50 years old, but strong and healthy, so his age will probably not stop you from getting good service from him" (Aagard, 1898).

One must also acknowledge that the material includes a case in which an individual was selected for multiple expeditions despite known health issues; zoologist Ohlin, who was both scientifically and socially competent but struggled with alcohol abuse. Whether his inclusion was due to his scientific expertise and pleasant demeanour compensating for his health challenges, or if there was a desire to help him recover, is unclear. Nathorst, and Ohlins other friends, were not unique in thinking that participation in another expedition would help him get back on his feet. At the time, expeditions were seen as a potential good for a person with a history of alcohol abuse. They were by no means completely dry – alcohol was drunk on both of Nathorst's expedition and on the Antarctic rescue expedition – but drinking was limited and could be kept under control (Guly, 2012b). During his final expedition with Nordenskjöld to Antarctica, Ohlin fell ill and was forced to return to Sweden before reaching the southern continent. He died of tuberculosis the following year. Lewander notes that fellow scientist Andersson, who had travelled with Ohlin on Nathorst´s expedition in 1898 and who liked him well, regarded Ohlin's presence as problematic. In his opinion Nordenskjöld ought to have ensured the health of all participants before departure, instead of risking both the work and the health of the other participants (Lewander, 2002). Failing to take measures to secure a healthy crew threatened the success of an expedition and could be seen as a failure in leadership. Clearly, ensuring the physical health of participants was critical, both for the expedition's success and for the leader's reputation.

The polar hiring market

It has been claimed that the expedition leaders had an abundance of applications and could select participants freely. Axel Klinckowström wrote about the rescue expedition:

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> My brother-in-law did not find it hard to recruit. After all, the Swedes still have Viking blood in their veins and love a great adventure. If anyone wanted to equip an expedition to Mars, it would not likely be cancelled due to lack of participants. Gyldén just had to pick and choose. (Klinckowström, 1933, p. 223)

According to journalists, Nathorst stated that he had received "bales of letters from scientists and sailors announcing their desire to participate." An article noted that the professor jokingly remarked that he ought to publish an announcement that all positions were already filled, as responding to all the letters took up a great deal of his time (The *Stockholms Dagblad*, February 26, 1899). However, this is not entirely accurate, and makes one wonder if the number of applications for Scott's and Shackleton's expeditions might also have been somewhat exaggerated. There were 33 applications to join Nathorst's expedition in 1899, and 48 persons wrote to apply for the 1903 rescue expedition. Given the meticulous manner in which Nathorst and Gyldén managed their correspondence, it seems unlikely that a great number of applications were lost to posterity, though some may have gone astray.

Expedition leaders like Nathorst, De Geer, Nordenskjöld and Gyldén could not assemble their teams exactly as they wished. Various obstacles prevented ideal recruitment. Candidates declined invitations due to prior commitments, health issues, unsatisfactory wages and benefits, or because of not getting leave from their regular positions. Gyldén, for example, lost the second engineer he had hoped for because "he has gone and got himself engaged to be married" (Gyldén, 1903b). Some navy personnel were unavailable because they were not released from regular service, despite Gyldén's wishes and help with formulating applications for a leave of absence. Nathorst failed to secure certain scientists due to their conflicting obligations, and the medical doctor he wanted declined because of poor health – reasonably arguing that a prolonged stay, perhaps even a winter, in Arctic climate would not do any good to his rheumatism (Munthe, 1897).

Even those who initially accepted positions occasionally failed to appear when the time came to board ship, forcing last-minute adjustments. Gyldén had to hastily recruit two able seamen when two previously engaged did not turn up. It is likely that this recruitment challenge was exacerbated by competition when multiple expeditions were launching, all vying for experienced sailors, officers and scientists familiar with icy waters. When Nathorst learned that Hans Haslum had applied for a Danish expedition, he immediately wrote to Swedish scientist Jäderin, leader of the upcoming summer's Arc-of-Meridian surveys, urging him to recruit Haslum: "It would be a pity to see such a man in Danish service" (Nathorst, 1898). Mates Menander and Bergendahl initially applied for and were accepted onto Nordenskjöld's Antarctic expedition. However, uncertainty over funding led them to join the Baldwin-Ziegler expedition instead, from which they later returned in time to participate in Nordenskjöld's rescue. Hans Haslum turned down offers from several expeditions to join Nathorst in 1899, partly because he got the wages he demanded, partly because he liked serving with Nathorst. He declined an offer from the Duke of Abruzzi, regarding his expedition too adventurous, but he did join Nordenskjöld's Antarctic expedition, thus getting quite an adventure. If anyone could *truly* pick and choose, it seems that privilege belonged to seasoned sailors with experience in scientific expeditions in icy waters – not to the expedition leaders.

Conclusions

The impression that personnel recruitment was conducted haphazardly or casually has, in my view, been softened through close examination of the planning process. While there was no formal recruitment system, no job postings, no explicitly stated qualifications, and no clear division of labour in the process, an apparently effective method existed for leveraging networks across various sectors of society to identify the right individuals.

The expedition leader alone was responsible for selecting the scientists who would participate. This was done through personal connections, and it was relatively rare for aspiring scientists to reach out and request a position. Those who did so without having a known academic reference familiar to the expedition leader were not selected.

Since expedition leaders were scientists rather than seafarers, they required assistance in recruiting suitable sailors, although they could enlist some through their own contacts. For Nathorst, this meant relying on the experienced Captain Nilsson, who was hired for the 1898 expedition and later provided advice and assistance in 1899. Gyldén, who was himself a naval officer, took charge of recruitment for the Antarctic rescue expedition after being appointed to the role by Nathorst and De Geer. The first choice for any recruiter was to select individuals they had previously worked with. Engineers were asked to recruit stokers, and sailors who had previously participated in expeditions contributed recommendations for suitable crew members. Beyond this, expedition leaders relied on both personal contacts and more or less professional recruiters.

The most sought-after expertise was experience of seafaring in icy waters. While not all crew members were expected to have such experience, every expedition aimed to include a core group of men with this background. These individuals were most often recruited as first or second mates and as engineers. Although they possessed formal qualifications, having completed maritime schooling, experience seemed to carry greater weight. If a prospective crew member had previously participated in scientific expeditions and showed interest in research, he became an even more attractive candidate. The value of such men was reflected in wages. Sailors on these expeditions received salaries and benefits above the standard for their time. Additionally, their ability to perform their duties well and their pleasant demeanour mattered in the selection process. Expedition leaders or other recruiters sought information about candidates' character, and individuals with reputations for being difficult or unpleasant were rejected. A candidate's health condition also typically played a role.

No expedition leader succeeded in assembling their dream team. Although both Nathorst's 1899 expedition and the Antarctic rescue expedition were said to have had an abundance of applications and could pick and choose among men, the reality was somewhat different. The number of applicants was not as high as suggested, and desired participants could decline for a variety of reasons. Sailors with previous experience of scientific work in icy waters and a good reputation were sought after and seem to have known their value. It seems to have been their market rather than the expedition leaders."

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