

Research Article

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Abstract

The research aims to reconstruct a transnational history of Finn Malmgren's contribution to the exploration of the Arctic, with a specific focus on the polar air expeditions of *Norge* (1926) and *Italia* (1928). The analysis of archive sources consulted in Italy, Norway, and Sweden sheds light on some key aspects of these two expeditions. In particular, the study of numerous unpublished documents – from the correspondence with personalities such as Umberto Nobile and Anna Nordenskjöld to the contemporary testimonies of Adalberto Mariano and Filippo Zappi – offers new insights into issues such as the international meteorological cooperation during the preparation of the *Norge* expedition and the march on the pack of Malmgren, Mariano and Zappi.

From university years to the Maud polar expedition

Finn Malmgren is one of the leading figures in contemporary polar history although less studied in recent years. To the exclusion of some known biographical writings (Wetterfors, 1928; Lazazzera, 1931; Nystrom, 1949; Liljequist, 1993), Malmgren is often mentioned exclusively in lists of the crews of the *Maud*, *Norge* and the *Italia* expeditions. This is the starting point for this research, which proposes a transnational reading of Finn Malmgren's contribution to the exploration of the Arctic between 1922 and 1928 in the light of his previous experience of training and research between Sweden and Norway. After graduating from the Norra Real gymnasium (Dagens Nyheter, Stockholm, 12 May 1912), Malmgren enrolled at Uppsala University in the fall of 1912, where he began studying chemistry, physics, and mathematics (Nystrom, 1949). It was in these years that Malmgren deepened the study of meteorology under the supervision of Filip Åkerblom, a scholar who three years earlier had been appointed Professor of this discipline at the University of Uppsala (Aftonbladet, Stockholm, 1 September 1909). After obtaining the Bachelor of Science in 1916, Malmgren had his first field experience in Swedish Lapland in 1917–1918 at the meteorological observatory built on the heights of Pärtetjåkkå. Since 1911 a research hut had been operating here, transformed into an observatory in July 1914 thanks to the Riksdag's state subsidies (Hamberg, 1918): at what, with a later expression of Nils Ekholm, could be defined as «an institution created and maintained with state funds» (Svenska Dagbladet, Stockholm, 11 October 1922, transl.), several Swedish meteorologists made their first field studies under the supervision of Axel Hamberg. After his experience on Pärtetjåkkå, Malmgren continued his research at Uppsala University, where in 1920 he was appointed Assistant at the Meteorological Department. It is at this juncture that a key stage in Malmgren's training and research journey took place: the participation in the meeting of the International Commission for the Exploration of the Upper Air which was held in Bergen between 25 and 29 July 1921 and which should be briefly framed first. Since the First World War, a community of Norwegian and Swedish scientists gathered around the scientific aegis of Vilhelm Bjerknes (Bergens Tidende, 29 December 1923), distinguished since 1897–1898 for his theoretical physics classes at the University of Stockholm (Ćurić & Spiridonov, 2023). Together with his son Jacob and other scientists (among others, Harald Ulrik Sverdrup, Theodor Hesselberg, Halvor Solberg and Tor Bergeron) Vilhelm Bjerknes laid the foundations of the Bergen Meteorological School (Friedman, 1989), promoting the creation of a permanent Geophysical Commission and of the Weather Forecasting Office for Western Norway (Jewell, 2017; Vollset, Hornnes & Ellingsen, 2018). Well, the meeting of the International Commission for the Exploration of the Upper Air in July 1921, attended by scientists from ten nations (Göteborgs Handels- och Sjöfartstidning, 27 July 1921), was the event that sealed the global relevance of the Bergen Meteorological School. Facilitated by the previous scientific collaboration in Stockholm of W. Bjerknes and Solberg (Hesselberg, 1918) was the participation in the conference of Swedish meteorologists, several of them operating in Norway: Axel Wallén, Johan Sandström, Gustav Gyllström, Harald Norinder, Ernst Calwagen, Erik Edlund, Hilding Köhler and Finn Malmgren (Hvar 8 dag, Stockholm, 1921; International Commission for the Investigation of the Upper Air, 1921). The Bergen conference heralded a consolidation of meteorological cooperation between Norwegians and Swedes, symbolised by the study by Bjerknes and Solberg ten months later (Bjerknes & Solberg, 1922; Kutzbach, 1979), which in turn was further expanded and modified by Bergeron (Eliassen, 1999). A meteorological

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cooperation that can be evoked with a testimony of Hesselberg linked to the Polar Front Theory (Huschke, 1959): «[The cyclone] is born as Solberg's initial wave on the polar front, develops into Jack Bjerknæs's ideal cyclone, and finally suffers the Bergeronian occlusion death» (Eliassen, 1995:6). The pioneering research conducted by the Norwegian-Swedish milieu of the Bergen Meteorological School would have been the basis of Malmgren's contribution to the study of the Arctic meteorology between 1922 and 1928. After his experience at the observatory on Pärtetjåkkå and his participation in the meeting of the International Commission for the Exploration of the Upper Air, a third key moment of the training and research path of Malmgren can be identified in the work conducted in the scientific station of Bornö, in Gullmar Fjord, between 1921 and 1922 at the invitation of Otto Pettersson: following in the footsteps of Sandström (Lundberg, 2008), Malmgren participated in the hydrographic and biological investigations conducted during the autumn of 1921 in the Skagerrak and in the Southern Baltic Sea (Göteborgs-Posten, 17 November 1920; Göteborgs Handels-och Sjöfartstidning, 12 May 1921; Arbetet, Malmö, 29 July 1921; Liljequist, 1993; Svansson, 2006). Ultimately, the training and research path between meteorology and oceanography (Uppsala, Pärtetjåkkå, Bergen, Bornö) would have led Malmgren to join the «last of the great exploratory enterprises conducted in the Arctic Polar Sea basin by traditional means» (Dainelli, 1960: 324, transl.): the polar sea expedition of the *Maud*. This mission can be divided into three phases: the first led by Roald Amundsen (1918–1921), the second and the third ones by Oscar Wisting (1920–1921; 1922–1925). The scientific leadership was instead entrusted to H. U. Sverdrup, flanked from the third phase by Malmgren. Was the same Sverdrup to advance several times during the winter of 1920–1921 the idea of expanding the scientific staff of the expedition (Amundsen, 1921; Sverdrup, 1926). According to a contemporary interview by Malmgren, it was Vilhelm Bjerknæs who mediated the meeting between the Swede and Amundsen (Aftenposten, Oslo, 1 May 1922). There were two reasons for Malmgren's choice as Sverdrup's assistant: first, the slightly earlier experience of oceanographic research in Bornö under Pettersson's guidance; secondly, the excellent preparation in meteorology studies, crowned by the recent participation in the conference of the International Commission for the Exploration of the Upper Air. Bjerknæs' interest in the *Maud's* meteorological research can be traced at least in part to the fact that it would have been the first time that the Polar Front Theory would have been studied in the Arctic Ocean (Aftenposten, Oslo, 27 April 1922; Aftenposten, Oslo, 1 May 1922; Ukens Nyt, Oslo, 18 November 1924). After receiving a telegram from Amundsen on April 8, 1922 (Nordtrønderen, Namsos, 12 April 1922), Malmgren went to Oslo to confer with Leon Amundsen and then depart from Bergen for the United States (Aftenposten, Oslo, 27 April 1922). The *Maud* sailed then from Seattle with a crew of eight men so formed: Wisting (leader), Sverdrup, Malmgren, Gennady Olonkin, Søren Marentius Syvertsen, Carl Martin Hansen, Odd Dahl and a Chukchi named Kakot. Departed a month later from Point Hope (Alaska), the *Maud* reached Herald Island on August 8, 1922: from that day until August 9, 1924, the ship went adrift (Sverdrup, 1927–1939; Wisting, 1930) like the *Jeannette*, or «in a similar westward and anticyclonic direction over a very shallow sea to the north of Bering Strait and eastern Siberia» (Nansen, 1928: 10). Until their return to Seattle on October 5, 1925, Sverdrup and Malmgren made numerous meteorological, oceanographic and magnetic observations (Sverdrup, 1927–1939) using extensive scientific equipment

(Dahl & Lunde, 1976). It would be limiting to identify a rigid separation of the work and the results achieved by the two scientists: as recalled years later by Sverdrup, fundamental was the daily discussion with Malmgren of the research during the three and a half years aboard the *Maud* (Sverdrup, 1927, 1928). Although the expedition did not achieve its intended geographical objectives, the scientific ones were nonetheless remarkable. In particular, the tidal surveys conducted between Point Barrow and Cape Čeljuskin showed the groundlessness of the hypothesis advanced a decade earlier by Rollin Arthur Harris: that there were large landmasses in the Arctic Ocean between Wrangel Island and the North Pole (Harris, 1911; Sverdrup, 1927–1939; Sverdrup, 1959). As for the work conducted by Malmgren, his measurements and analysis of the properties of sea ice, both physical (weight, salt content) and thermal (melting heat, expansion, conductivity) were extremely relevant (Malmgren, 1926b). Investigations that would have been the basis of one of the best-known studies of Malmgren, *Studies of humidity and hoar frost over the Arctic Ocean* (Malmgren 1925a; Malmgren, 1926c). This was, in the words of Sverdrup, a «special study of the formation of frost» (Sverdrup, 1933: 17), in which, for example, it was found that «hoar frost is generally formed when RH_{ice} [relative humidity of the ice] is greater than 100% but never when RH_{ice} is below 100%» (Wyszyński & Przybylak, 2014: 10). Malmgren would have continued working on the material collected during the *Maud* expedition over the next two years for his doctoral thesis in Meteorology entitled *On the Properties of Sea-Ice* (Dagens Nyheter, Stockholm, 2 September 1927; Malmgren, 1927).

The Norge aerial polar expedition

About a month and a half before Malmgren and the rest of the crew of the *Maud* returned to Seattle, Umberto Nobile received from Hjalmar Riiser-Larsen an invitation of Amundsen «for an important and secret conference» to be held, at first, in Rome (Riiser-Larsen, 1925a) and then in Oslo (Riiser-Larsen, 1925b). From these two telegrams, Nobile assumed that the Norwegian explorer wanted to call on Italians «for the construction of an airship» (Nobile, 1925a, transl.). This was the origin of the Amundsen-Ellsworth-Nobile Transpolar Flight. J. Bjerknæs was initially thought to be involved in the meteorological preparation of the expedition, since in the summer of 1925 he was working on the observations collected during the recent Amundsen-Ellsworth polar aerial expedition (Amundsen, 1925). Well, it was to J. Bjerknæs that in November 1925 Nobile asked for support for the meteorological preparation of the *Norge* expedition. Nobile stressed the need for «observations (as complete as possible) on the direction and speed of the prevailing wind, the occurrence of clouds, fog» in Trondheim and the Kongsfjorden, or in the two places where the airship was to stop. Nobile also asked J. Bjerknæs for further information on the «weather conditions» of the Alaskan coast «in May and June» (Nobile, 1925b). In December, however, it was Malmgren who replied to Nobile: «The letter was addressed to Professor Bjerknæs, but he passed it on to me, because I, in my capacity as the future meteorologist of the expedition, deal with the issues at issue here» (Malmgren, 1925b). Before continuing with the examination of the correspondence between Nobile and Malmgren, we should take a step back. Faced, in fact, with the decline of the participation of J. Bjerknæs and Sverdrup in the polar expedition of *Norge* and its organisation, Hesselberg invited Malmgren at the historic site of Allégaten 33 in Bergen to train with the practical meteorology of the Weather Forecasting Office for

Western Norway with the techniques adopted by the Bergen Meteorological School (Hesselberg, 1925). Malmgren would have recalled this experience of formation that took place in the crucial months of the preparation of the *Norge* expedition: «je pourrais étudier, pendant plusieurs mois, à Bergen, le service des prévisions et me mettre complètement au courant des nouvelles méthodes inaugurées par Bjerknes, Solberg et Bergeron» (Amundsen & Ellsworth, 1927: 215–216). Returning to the reply to the letter of Nobile, Malmgren then made some observations: for example he pointed out that «the most dangerous part (seen from the meteorological side)» and «one of the most stormy in the world» was the stretch between Trondheim and Svalbard (Malmgren, 1925b). In the continuation of his correspondence with Nobile between December 1925 and February 1926, Malmgren dialogued from Bergen with the Italian colonel around some key issues related to the meteorological preparation of the *Norge* polar aerial expedition. Examination that requires some attention from the historian since Malmgren sent in that period both to Nobile and to other Norwegian personalities undated letters: detail, for example, taken over by a member of the Board of Directors of the Norwegian aeroclub, Arnold Ræstad, when, in January 1926, he replied to Malmgren's «undated letter» («brev udatert») by sending him meteorological data from Trondheim and Green Harbour (Ræstad, 1926). One of Malmgren's main contributions to the meteorological organisation of the *Norge* expedition was the analysis and sharing with Nobile of the «new meteorological data from the Arctic Sea» collected by him and Sverdrup during the *Maud* expedition. These, in fact, had been «for a long time kept in U.S.A., from where dr. Sverdrup now has taken them home». Accompanying the letter with a hand-drawn explanatory diagram, Malmgren found, for example: «From these observations you will find, that during April and May there always exists a layer of cold air, just over the ice surface. This layer has a thickness of about 200 m. Its temperature is about 7° to 8° degrees colder than the air over it. The limit between both the layers is very sharp» (Malmgren, 1925c). As it emerges from the letters sent by Nobile to Malmgren, two leading issues were in December 1925 related to the choice of the route to reach Svalbard and the identification of the most appropriate period for the air stretch from Kongsfjorden to Alaska. This was a crucial issue for whose solution Nobile proposed a meeting at the beginning of the following year: «It is possible that the very first days of January I will come to Norway. At that time, if you will have ready all the above dates, we will be able to examine and discuss them together» (Nobile, 1925c). In this long-distance dialogue between Rome and Bergen, Filippo Eredia, who at the beginning of December 1925 had been appointed Head of the *Ufficio Presagi* of the Italian Royal Air Force (Minister of Aeronautics, 1926), played a key role. Shortly after, it was Eredia who urged Nobile to take a safer route through Russia (Nobile, 1925d). During his mission to Oslo from 12 to 18 January 1926, Nobile met Hesselberg and Malmgren to discuss some points concerning the meteorological preparation of the *Norge* expedition (Nobile, 1926a; Nobile, 1930). During the period of the agreements that lasted until March 1926, it was established that the *Ufficio Presagi* (through Eredia) would have provided meteorological support to the airship for the route from Rome to Gatčina, near Leningrad, while the Norwegian Meteorological Institute (through J. Bjerknes and Malmgren) would have coordinated the «weather forecast beyond Leningrad» (Nobile, 1926b, trans.). During the long phase of the expedition's preparations, therefore, Malmgren's contribution to meteorological preparation can be associated with three places and as many key

episodes: Bergen and his correspondence with Nobile in December 1925; Oslo and the meeting with Nobile in January 1926; Rome and the meetings with Nobile and Eredia in March 1926 (Contract, 1926). Contribution during the preparations that would be on the other hand remembered in the motivation of the award of the silver medal by the Italian Geographical Society: «to the Doctor Finn Malmgren: Swedish Subject; cared with wisdom the meteorological service before the voyage and along the route» (Bollettino della Società Geografica Italiana, July 1926: 519, transl., emphasis mine). In the period between the departure of the airship from Ciampino and the arrival at Kongsfjorden, Malmgren also participated in the meetings that were held during the two stops in England and Russia, contributing significantly to the discussion and resolution of some technical issues related to the meteorological part of the expedition. First, at the branch office of the Meteorological Office in Pulham, Malmgren cooperated with Maurice Giblett, George Herbert Scott, Nobile, Eredia and J. Bjerknes (Amundsen & Ellsworth, 1926; M. A. G., 1928); secondly, Malmgren discussed weather problems in Leningrad with Nobile, Eredia and some Russian scientists (Il Corriere della Sera, Milan, 3 May 1926; L'Impero, Rome, 4 May, 1926). Malmgren played, in short, a key role in the international meteorological cooperation of the *Norge* expedition to which contributed scientists, military and agencies from Italy, Norway, Sweden, England and Russia (Il Corriere della Sera, Milan, 26 March 1926; Ukens Nytt, 27 March 1926; Il Corriere della Sera, Milan, 10 May 1926; Paoloni, 1926). The most famous part of the transpolar flight was the connection between Svalbard and Alaska: on May 11, 1926, the airship *Norge* left Kongsfjorden with on board six Italians (Renato Alessandrini, Ettore Arduino, Attilio Caratti, Natale Cecioni, Nobile, Vincenzo Pomella), eight Norwegians (Amundsen, Birger Lund Gottwald, Emil Andreas Horgen, Oskar Omdal, Riiser-Larsen, Fredrik Ramm, Fridtjof Storm-Johnsen, Wisting), one American (Lincoln Ellsworth), a Swedish (Malmgren) and a dog named Titina. As Nobile would have recalled in his first report of the mission drawn up in Nome in June 1926, during the Svalbard-Alaska flight Malmgren took care of the «collection of meteorological data» and performed «readings on the apparatus for measuring atmospheric electricity» (Nobile, 1926c, transl.). Equally important was then the advice Malmgren continually gave to Nobile and Riiser-Larsen concerning what height the airship should have maintained to avoid the danger of ice formation (Dagbladet, Oslo, 17 May 1926). The Swedish contribution (represented by Malmgren) to the success of the Amundsen-Ellsworth-Nobile Transpolar Flight can be symbolised by an episode that occurred at 1:30 am on 12 May: after the launch on the North Pole of the three flags (Norwegian, US and Italian respectively), Malmgren threw a coin worth two Swedish crowns on the pack (Arnesen, 1926). Upon his return to Sweden, Malmgren was welcomed as a hero, or «the first Swede to have been at the North Pole» (Dagens Nyheter, Stockholm, 21 July 1926). Similarly to Nobile, Ellsworth, Amundsen, and Riiser-Larsen (Alfei, 2022), Malmgren organised a conference tour through thirty cities in Sweden between September 1926 and February 1927 to talk about the *Norge* expedition (Dagens Nyheter, Stockholm, 16 September 1926; Dagens Nyheter, Stockholm, 25 September 1926). Throughout the tour stops, Malmgren received numerous awards and honours: in Stockholm, for example, he was awarded the Retzius Medal for his contribution to the *Maud* and *Norge* expeditions (Dagens Nyheter, Stockholm, 19 February 1927). Malmgren continued to lecture on the two expeditions during 1927: in this regard, mention may be made of the informative

conference focused on his experience aboard the *Maud* («3 år i drivisen En beskrivning av liv och verksamhet ombord på *Maud* under den norska Polhavsexpeditionen 1922–1925») planned by correspondence with Otto Nordenskjöld since February 1926 (Malmgren, 1926a; Dagens Nyheter, Stockholm, 21 September 1927). It would be because of one of these lectures that Malmgren would meet the daughter of O. Nordenskjöld, Anna, future girlfriend with whom he would have a close correspondence during the *Italia* polar expedition.

The *Italia* aerial polar expedition

During the meeting of the Board of Directors of the Italian Geographical Society on 12 July 1927, Umberto Nobile expounded the plan to resume with the airship N4 «the exploration of the Arctic area that for the first time was crossed by him with the *Norge*» (Lanza di Scalea, 1927a, transl.). The project was not a mere re-proposal of the previous flight: with the words of Prince Lanza di Scalea, it would have been conducted «a geographical survey of the polar area not seen from the *Norge*, as wide as possible, accompanied by an intense collection of scientific elements, for the physical study of the region and its atmosphere» (Lanza di Scalea, 1927b, transl.). Received on 12 October 1927, the authorisation of Mussolini for the organisation of the new polar expedition (Balbo, 1928), on 6 December, Lanza di Scalea and Italo Balbo signed the *Convention for the Italian Air Expedition to the Arctic Regions* (Convention, 1927). About a month later Nobile approached the Norwegian legate Ove Vangensten to invite Malmgren to take up the role of meteorologist aboard the airship: «Having to proceed with the choice of such a meteorologist, I thought first of all of Dr. Malmgren [sic], with whom I am already familiar, and who made a good test in the expedition of 1926» (Nobile, 1928a). This is an opinion that Nobile would have confirmed during the interrogations of the Commission of Inquiry (1928–1929): «Malmgren had been with us [in 1926], and from the point of view of meteorologist I was satisfied with the way he had fared» (Nobile 1928g: 20–21, transl.). In addition to the excellent work as meteorologist on board, a second fundamental reason that prompted Nobile to involve again Malmgren attached to the scientific research programme of the expedition: alluding to the previous experience of Malmgren at the station of Bornö and recalling his «great experience of oceanography», Nobile intended in fact «to entrust him with the execution of oceanographic research» (Nobile, 1930: 46, transl.). According to Eredia, this was precisely the reason for Malmgren's choice: in fact, Nobile declared at the beginning of 1928 the desire to invite the Swede «because he was very involved in oceanography studies» (Eredia, 1928: 2, transl.). The invitation to join the new polar mission was accepted by Malmgren on two conditions: first, that the expedition had indeed «the possibility of performing a positive and scientific work»; secondly, that the same expedition could reward «the purely economic sacrifices» consisting in leaving the University of Uppsala for a few months and «cancel a contract for a series of popular conferences» (Malmgren, 1928a). As Vangensten would have later specified, Malmgren in January 1928 attached special importance to Nobile's project of «a probable descent with a rather prolonged stay on the ice as close as possible to the pole of a group» of which the Swede would also be part (Vangensten, 1928). This project would have been further defined by Nobile foreseeing that the group would be formed «by two physicists», namely Malmgren and Aldo Pontremoli, «by an officer of the Navy» and by Nobile himself (Nobile, 1928e, transl.). Descent that would have been

hypothesised for the second polar flight of the airship to Severnaja Zemlja: as Mariano would have confirmed during the interrogations of the Commission of Inquiry, Malmgren, similar to Pontremoli, would have given «a great importance to the fact of being able eventually to go down on some point of that earth, in order to be able to make some observations» (Mariano, 1928b: 40, transl.). After Malmgren's willingness to participate in the *Italia* expedition, on 19 January 1928 Nobile systematised a meteorological assistance plan, dividing it into two phases, or the journey from Rome to Svalbard and the exploration of the Arctic. In Nobile's plans, Malmgren (on board) and Eredia (in Kongsfjorden) would have worked in synergy (Nobile, 1928b). During a meeting held in Rome, it was decided that Eredia would have assumed «the direction» of the meteorological service and that he would have received the «assistance from Prof. Malmgreen [sic]» (Meeting, 1928, transl.). As the preparations progressed, and particularly between March and the first half of April 1928, Malmgren played a key role in Sweden, Norway and Italy. First, he planned in Stockholm with the Swedish Meteorological Institute (Malmgren, 1928b), whose support was considered fundamental for the flight of the airship from Germany to Norway, more precisely from Stolp to Vadsø (Nobile 1928c; Nobile 1928d). Secondly, Malmgren went to Oslo to further define the help that the Meteorological Institute and the Geophysical Institute could have provided, through Hesselberg and Ole Andreas Krogness respectively, for the route from Stolp to Kongsfjorden and for flights over the polar ice cap (Malmgren, 1928b; Gottwaldt, 1928; Nobile, 1928f; Nobile, 1928g). Malmgren's contribution to the preparation of the 1928 polar expedition is finally linked to a two-week stay in Italy between the end of March and the first half of April. In addition to the well-known meetings in Rome with Eredia and Frantínšek Běhounek (Lazazzera, 1931), as revealed in a letter sent to Anna Nordenskjöld, Malmgren on 3 April 1928 went to Livorno to test some oceanographic equipment aboard an Italian destroyer in the waters of the Mediterranean Sea (Malmgren, 1928d). In the same period, date a series of episodes revolving around the preparations for the polar expedition, among them the meeting of Malmgren with Pope Pius XI. Significant in this regard is a letter sent to A. Nordenskjöld in which Malmgren reported on a dialogue in German with the pontiff concerning the Codex Argenteus kept in the Carolina Rediviva Library in Uppsala (Malmgren, 1928c). Between the last phase of the preparations and the first section of the route from Baggio to Stolp, it is also possible to identify the breaking point of relations between Malmgren and Eredia, that is one of the shadow cones of international meteorological cooperation of the *Italia* polar expedition. According to Eredia, it was from Milan that Nobile put Malmgren's scientific advice before that of the Italian meteorologist: «things had changed; Nobile always spoke with Malmgren and no longer asked me for anything» (Eredia, 1928:2, transl.). Zappi would have expressed a similar opinion, declaring that «at first Prof. Eredia was well-known while later he was set aside by Gen. Nobile» (Zappi, 1928b: 20–21, transl.). Glossing over further opinions regarding the relationship between Malmgren and Eredia, such as that one according to which Nobile considered the Italian meteorologist «less competent than Malmgren» (Trojani, 1964: 256), an episode is revealing of how to play in favour of the Swede was the personal trust of Nobile. Before proceeding, we should take a step back. Between February and March 1928, through the meteorologist Hugo Hergesell, it was guaranteed that during the flight from Milan to Stolp, the Italian airship would have been «constantly in communication with the Lindenberg R.T. station» (Nobile, 1928c,

transl.; Fier, 1928a; Hergesell, 1928; Von Ficker, 1928). Well, according to Giulio Fier, Nobile decided to leave Baggio on the night of April 15 despite had been reported by Lindberg «bad» weather conditions that «advised against leaving Milan» (Fier, 1928b: 2, transl.). In addition to this risk, Nobile along the route from Baggio to Stolp also decided to rely on the indications of Malmgren instead of those of Eredia, who had suggested to change the route proceeding west: as Eredia would have stated months later, Malmgren «allowed himself to be of opinion contrary to mine; I said go to West, instead Malmgren said it was cheaper to go to East. And the General [U. Nobile] decided for the Levant» (Eredia, 1928: 3). The route proposed by Malmgren was, indeed, the worst choice. It was Malmgren himself who recognised the seriousness of his error in a letter sent to A. Nordenskjöld the day after his arrival in Stolp. In the letter, Malmgren reported how Nobile, despite being angry, at the time uttered no word («utan att säga ett ord»); only later Nobile reprimanded the Swede in private to be «too bold» («för djärv»). Malmgren confided to A. Nordenskjöld that because of this error (which could have led to a tragic outcome), he even thought of abandoning the expedition and taking full responsibility for the risk. Despite Malmgren's serious mistake, Nobile continued to rely on him (Malmgren, 1928e). In addition to the relationship with Eredia and the error of assessment of the route to Stolp, Malmgren's correspondence with A. Nordenskjöld sheds light on the friendship and collaboration between the Swedish meteorologist and the other Italian crew members. Of relevance among this documentation are the positive comments of Malmgren towards Mariano and Zappi expressed since April 3, 1928 (Malmgren, 1928d). The only Italian to whom Malmgren had reservations (in confidence) and a certain resentment was Pontremoli, considered by the Swede to be «slimy and false» («min kollega Pontremoli, som verkar falsk och sliskig») (Malmgren, 1928f). Overall, however, Malmgren noted the great commitment and seriousness shown by the Italians (Malmgren, 1928g). The arrival at Kongsfjorden, defined as the «real operational base» of the mission, marks a caesura in the expedition as in the private correspondence of Malmgren, now entirely focused on scientific research (Malmgren, 1928h, transl.; Běhounek, Pontremoli, Malmgren, 1929; Nobile et al., 1938). It was the second polar flight of the airship *Italia* to Severnaja Zemlja (15–18 May 1928) to constitute the privileged object of the last writings of Malmgren. On 20 May, at Kongsfjorden, Malmgren drew up a six-page report on the mission, explaining clearly the causes that led to its interruption: «the wind west of Lenin Land was a heavy northern wind. It was caused by a cyclone over the Tajmyr Peninsula and strengthened by the anticyclonal currents sound the high pressure over Franz Josefs Land. That wind became the fate of our trip. After having fought against it for many hours the head of the expedition determined to turn as it was dangerous to proceed any longer east» (Malmgren, 1928i; Nencioni, 2010). The journey to «Lenin Island» was also the main topic of the last letter sent by Malmgren to A. Nordenskjöld: the Swede meteorologist pointed out that the mission had been interrupted «about 60 kilometres from the destination». In this last and significant letter Malmgren foresaw, the successful outcome of the last and third flight, defined «a pleasure journey» («nöjesresa») (Malmgren, 1928l). The story, as is known, went differently: a few days later the crash occurred on the pack of the airship *Italia*, the causes of which have been the subject of recent studies (Alessandrini & Bendrick, 2019). In this regard, some further (certainly not exhaustive) considerations can be made about the alleged responsibilities of Nobile and Malmgren in the airship incident. Nobile in this regard, during his

correspondence with Ove Hermansen years later, provided an articulated testimony on the issue. First, Nobile, referring to his writings (Nobile, 1930), refuted the position expressed since the 1920s by Krogness (Dagens Nyheter, Stockholm, 27 January 1930) then supported by Gunnar Hovdenak that the General would be «warned against starting towards the North Pole on the 23 May by Tromsø Institut»: on the contrary, according to Nobile, the Institute would have warned «of a depression covering Eastern Russia and Siberia» concluding that the situation was «sufficiently favourable (...) to start for route 5 [from the Pole to the mouth of the Mackenzie River] and 2 [from Greenland to the Pole]». Secondly, to Hermansen's question whether Nobile believed that Malmgren had made a serious mistake in advising «to carry on with the returnship from the Pole», the Italian General replied defending the Swedish meteorologist: «Malmgren's advice was given in good faith, on the basis of his sound meteorological knowledge. I was in a position of command, free to adopt or refuse it. The event proved that he was wrong in saying that the headwind would drop» (Nobile, 1966: 4). Criticising the thesis according to which Nobile would have challenged the opinion of Malmgren (Aftenposten, Oslo, 24 May 1968), in 1976 Martino Montalto argued that Nobile discussed and accepted «confidently the proposals» of the Swede: the data in Malmgren's possession, according to Montalto, would on the other hand have induced «any other meteorologist» to make the same decision, namely to return to Kongsfjorden «and, preferably, along a direct route». Montalto essentially exonerated Nobile, specifying among other things how the delay in the airship's return was «the effect of unpredictably strong winds» and considering the accident «an unfortunate concurrence of events» (Montalto, 1976: 175–178, transl.).

The march on the pack

As it is known, a few days after the crash on the pack of the airship *Italia*, more precisely on May 30, 1928, a patrol formed by Mariano, Zappi and Malmgren left the Red Tent to go in search of rescue (Biagi, 1929; Viglieri, 1929; Běhounek, 1930; Nobile, 1969). Regarding the composition of the team, Mariano later declared that it was Malmgren's precise will to join the march. According to the Italian navy officer, Malmgren considered himself «the only person who had a personal experience for previous practice of ice and Arctic countries» and assured that he would have been «able to obtain food along the areas crossed (especially birds' eggs)» (Mariano, 1928a: 3, transl.). In this sense, although Mariano was the head of the march, «the true guide was Malmgren [sic]» (Colonna, 1928b: 2, transl.). On the other hand, on the wave of benevolent judgments and praise for Mariano and Zappi expressed in the correspondence with A. Nordenskjöld, we share Nobile's observation that Malmgren supported the project of a march on the pack also because «tied by friendship to the two officers» (Nobile, 1970: 3). The itinerary of the planned march could be summed up as follows: from «lat. 80.42 N. long. 27.14» to Nordkapp (Zappi, 1928a: 3–4). As noted in June 1928 by Gerard De Geer, the march would have followed «about the same track as the Swedish sledge journey of 1873, probably crossing Cape Dickson over the same depression as the Swedes» (De Geer, 1928: 5). The march on the pack of Malmgren, Mariano and Zappi turned out to be in fact much more problematic than the one hypothesised on May 30 (Zappi, 1928a). According to Mariano, the «physical» and «moral» conditions of Malmgren were getting worse from the second day: the freezing of the right foot and the

swelling of the hands due to the cold («so swollen that they could not be used») were in fact accompanied by «incoherent speeches, sort of convulsions». After the first five days of the march, Malmgren – according to Mariano – said that the pack was «the most difficult he had ever encountered and that he did not even imagine that it was possible to find such a succession of obstacles» (Mariano, 1928a: 6–7, transl.; Boheman, 1929). On June 12, 1928, Malmgren, exhausted by difficulties and with his right foot frozen, according to Mariano, asked to be left on the pack: «we asked him [Malmgren], after exhorting him, what food he wanted us to leave him (we had noticed for example that he persisted in eating little pemmican) and in what quantity. He answered that we did not leave him anything, that the provisions would have only served to *prolong* a few days his sufferings and *his agony*» (Mariano, 1928a: 8, transl., emphasis mine). Zappi made a similar statement: «I made the trench. We put the ice to drink next to him [Malmgren] and asked him how much food he wanted but he refused saying that it would have *prolonged his agony*» (Zappi, 1928a: 17–18, transl., emphasis mine). As can be seen from the statements made by the two navy officers both in their reports of 25 July and during subsequent interrogations by the Committee of Inquiry, they were both aware that leaving the companion would have meant for him certain death; but at stake was the search for help of the castaways: «It was for us to let a person die. We were driven to the earth by this mission that we had to accomplish, because our companions were in the tent waiting; we needed rescue and this rescue depended on us» (Mariano, 1928c: 191, transl.). As is well-known, Zappi and Mariano were rescued by the Soviet icebreaker *Krassin* at 7 am on 12 July (Nobile, 1969). It was then that the two Italian officers, who were stayed cut off from the rest of the world during the march on the pack, reported that they had left Malmgren to die on the ice a month earlier. This news, which created quite a stir among the crew of the *Krassin*, quickly reached foreign correspondents (Sicolo, 2020). As soon as Malmgren's abandonment and death became public knowledge, the international press (especially the anti-fascist one) began to attack and, often, slander Zappi and Mariano, accused on multiple occasions of abandoning Malmgren, stealing his supplies, clothing, and even eating him (Parijanine, 1928). In Germany, “*Nachtausgabe*” claimed that Zappi and Mariano «fed with the corpse of poor Malmgreem [sic]» while “*Kieler Neueste Nachrichten*” went so far as to claim that Zappi stripped the Swedish «still alive» (Monico, 1928, transl.). In the Soviet Union, the «unfortunate contradictory statements» made by Mariano and Zappi on the matter were «commented anything but favourably by public opinion» (Sicolo, 2020: 242, transl.). In Sweden, newspapers such as “*Norrskensflamman*” repeatedly targeted the two navy officers, holding them responsible for abandoning Malmgren (Norrskensflamman, Stockholm, 13 July 1928). In Norway, “*Dagbladet*” even went as far as to advocate the possible application of the Norwegian Penal Code to the two officers for having abandoned Malmgren on the pack (Dagbladet, Oslo, 19 July 1928). Accusations that would then have been denied by Zappi and Mariano during the interrogations of the Commission of Inquiry: «Malmgren did not bring food, so it is not true what was said, that is that we took away his food» (Zappi, 1928c: 116, transl.); «I want to deny in the most formal, most absolute way, in the part that concerns me, all that the foreign campaign, I do not know from whom promoted, has provoked, has said towards Zappi and towards me» (Mariano 1928d: 234, transl.). As suggested by the large number of pages (about 22 out of 94) dedicated to Zappi and Mariano in the report of the Commission of Inquiry (Muliari, 2024), the episodes of the patrol of the three

constituted for the time a nodal event of the Italian polar expedition, already divisive also in the memory of the castaways: from the hagiographic narrative of Viglieri, who highlighted the «beauty» of the march of the patrol despite the failure (Viglieri, 1929: 93, transl.), to the harsh criticism made by Běhounek (Sjöborg, 1928).

Memory

The spread of the news of the death of Malmgren on 13 July 1928 if on the one hand exacerbated the attacks of the international press against Mussolini, Nobile, Mariano and Zappi, on the other hand it fuelled a process of heroicisation of Malmgren destined to continue until today. Malmgren, more specifically, had been associated with the figure of the hero since mid-July 1928 and his death as a sacrifice for a greater cause (Svenska Dagbladet, Stockholm, 13 July 1928; Svenska Dagbladet, Stockholm, 16 July 1928). A similar rhetoric was at the origin of the Swedish memorial fund for the memory of Malmgren promoted by some internationally renowned scholars such as Östen Bergstrand, F. Åkerblom, G. De Geer, Sven Hedin (Svenska Dagbladet, Stockholm, 16 July 1928). It was soon the turn of other national committees for the memory of Malmgren, among which the Danish one founded in August 1928 by personalities such as Peter Freuchen, Lauge Koch and Knud Rasmussen (Ewerlöf, 1929). After Sweden, the process of heroicisation of Malmgren was particularly evident in Norway. In this regard, it should be remembered that in addition to his participation in the meeting of the International Commission for the Exploration of the Upper Air in Bergen in July 1921, Malmgren had participated in the Arctic expedition of the *Maud*, as well as carried out periods of research in Bergen during the phase of the preparations of the *Norge* and *Italia* expeditions. And it is precisely on the basis of these experiences that Malmgren, nicknamed «Kungliga Nordenblästen», addressed a Norwegian correspondent in the canteen of the Italian ship *Città di Milano* at Kongsfjorden: «I have been so much in Norway and with the Norwegians so much time that I feel a bit like your compatriot» («Jeg har vært så meget i Norge og så meget sammen med nordmenn at jeg føler mig halvveis som Deres landsmann»: Under dusken, Trondheim, 10 November 1928). The Norwegian Consul in Stockholm also intervened on the issue, extolling the heroic efforts made by Malmgren «under the Norwegian flag» (Wollebæk, 1928, transl.). This was one of the leitmotifs of Malmgren's memory celebration: the fact that he was one of the Swedish scientists who worked for the benefit of Norwegian meteorology (Tidens Tegn, Oslo, 13 July 1928). A process of heroicisation, finally, particularly evident in the written production: from poems to memoirs, like the reference of the Norwegian journalist Odd Arnesen to «Malmgren's heroism, which will be remembered throughout the ages» (Arnesen, 1929: 154). Considering the controversial accusations made then against Mariano and Zappi, a case study of considerable interest regarding the memory of Malmgren is the Italian process of heroicisation, at home and abroad. Among the Italian anti-fascists operating abroad, and especially in France, the celebration of Malmgren was preserved with a sharp criticism of the fascist regime. Exemplary in this regard is a letter sent by Ubaldo Trisca (President of the Italian Democratic Union) to the Swedish Ambassador in Paris in which the celebration of the «attitude vrayement heroïque» of Malmgren was corresponded to «un contraste tellement frappant avec la conduite de l'envoyé de Mussolini [U. Nobile] à la tête de cette expédition» (Trisca, 1928). In Italy, the process of Malmgren's heroicisation was prepared by a progressive moral rehabilitation of

Mariano and Zappi. A key episode of this operation was the visit carried out in complete secrecy from Zappi to Malmgren's mother in Appelvikén: during the return journey by train of the castaways, in fact, Zappi separated in Krylbo, to then reach Uppsala (by train) and finally, Stockholm (by car), with the purpose of delivering to Anna Lovisa Forsgren the personal effects that belonged to Malmgren (Colonna, 1928a; Quentin, 1928; Colonna, 1928b). On the same occasion, Zappi also sent a bouquet of flowers to Anna Nordenskjöld, whose letter of thanks was then presented during the interrogations of the Commission to further witness the relationship of friendship that linked Malmgren to Mariano and Zappi: alluding, in particular, the correspondence previously analysed in April 1928, Anna Nordenskjöld in the aforementioned letter told of how Malmgren wrote much «about his great sympathy» towards the two Italian navy officers (Zappi, 1928d: 174, transl.). Similar occasions of affection on the part of Malmgren's family concerned Mariano: as reported by the envoy to Stockholm, Ascanio Colonna, a relative of Malmgren often visited the Italian officer during his stay in Sophiammet Hospital (Adresseavisen, Trondheim, 4 August 1928) keeping a «correct behaviour» despite the raging controversy against Mariano and Zappi (Colonna, 1928c, transl.; Mariano, 1928d: 244). The moral rehabilitation of Mariano and Zappi – which first passed through the affections and family of Malmgren – was a precursor to the heroicisation of the Swedish meteorologist by the fascist regime. About a year later, following the events of the Commission of Inquiry (which in fact exonerated Mariano and Zappi from any fault), Mussolini granted Malmgren the gold medal for civilian valour and awarded A. L. Forsgren an annual pension of two thousand crowns (Sjöborg, 1929a). The letter of thanks sent by A. L. Forsgren to Mussolini on 5 November 1929 therefore closed the phase begun with the visit of Zappi the year before: «La médaille d'or à la valeur civile qui lui a été décernée en reconnaissance de son héroïque sacrifice, la concession de la pension viagère en ma faveur, et surtout Votre photographie avec Votre voyageur, sont, Excellence, des témoignages tangibles de Votre générosité, que seule une mère, dont le fils unique s'est sacrifié pour le devoir et pour un haut idéal, sait profondément comprendre et apprécier» (L'Italie, Rome, 8 August 1929; L'Italie, Rome, 12 November 1929). A whole series of celebratory writings in Malmgren's honour followed in the same period: from the poem composed by Quirino Ficari (Sjöborg, 1929b) to the first Italian biography of Malmgren written by Rocco Lazazzera (Lazazzera, 1931). In this regard it is considered particularly significant that Mariano, during the inauguration of the statue of Finn Malmgren in Uppsala at Börjeparken, praised the celebratory book of Lazazzera, noting its spread in Italian schools (Stockholm-Tidningen, 2 November 1931). Finally, it was Nobile who, over a period of forty years, celebrated the memory of Malmgren on a multitude of occasions: from a lecture held in Stockholm in 1930 (Stockholms-Tidningen, 25 January 1930) to the praise expressed in more recent writings (Nobile, 1970: 1). A story, that of Finn Malmgren, too often relegated to the margins of polar history: the main aim of this research, certainly not exhaustive, has been to give back centrality to this scientist and rediscover through a transnational analysis a forgotten page of the Swedish contribution to the exploration of the Arctic.

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