

The pre-history of the Abel Prize

Arild Stubhaug

Translated by Ulf Persson.¹

In 1839, Scandinavian scientists started to meet occasionally in their capitals for both scientific and social reasons. In the summer of 1886 they met in Kristiania (Oslo), and the mathematical section was honoured by a visit of two professors of mathematics from Stockholm, namely Gösta Mittag-Leffler and his protégé Sonja Kovalevsky (Sofya Kovalevskaya), a Russian lady who was the world's first female professor in mathematics; widely celebrated not only for her mathematics, but also for her personal charm. The students applauded, and at the concluding dinner, the Norwegian professor of mathematics Carl Anton Bjerknæs gave a speech in her honour.

Bjerknæs (incidentally, the father of the more well-known meteorologist Vilhelm Bjerknæs) had six years earlier published an ambitious biography of Niels Henrik Abel, and upon receiving it, Kovalevsky had written the author that in her eyes Abel had always appeared as the ideal of a true mathematician.

At the very same dinner, Mittag-Leffler took the stand, raised his glass in honour of Abel, and suggested that one should start collecting money for the erection of a statue of him in connection with his upcoming centennial sixteen years later in 1902. The suggestion was received enthusiastically, and even before the participants had dispersed from the meeting, a significant amount (three thousand crowns, roughly half a yearly salary of a professor) had already been collected, and national committees have been formed. The Swedish side of the project was led by Mittag-Leffler and Sonja.

In European mathematics, Mittag-Leffler played a central role, a veritable entrepreneur, the likes of which had never been seen before (nor after?) in the world of mathematicians. Supported by the Scandinavian ministries headed by King Oscar II, he had founded *Acta Mathematica* in 1882, which quickly became a leading mathematics journal (and still remains so). To set the high standards the journal was intended to hold, its first issue displayed a beautiful portrait of Abel on the front page. Thanks to the prestige of Mittag-Leffler as well as his engagement, mathematics became



Niels Henrik Abel. (Public domain, published in: C. A. Bjerknæs, *Niels-Henrik Abel: tableau de sa vie et de son action scientifique*. Gauthier-Villars, Paris, 1885)

the subject of the most elevated status in the newly established Stockholm Högskola. Mittag-Leffler had also been instrumental in securing funds for Sonja's salary at the same time.²

² Högskola' is obviously cognate with 'high school,' but should be seen more as an institute of advanced study. It was meant to be an institute guided by idealistic principles based less on examinations than on the true joy of learning and research. Eventually it became more of a regular university, with its emphasis on conferring degrees, but achieving its formal status as a university would take until 1960, when it became the fourth university in Sweden after Uppsala (1477), Lund (1660) and Gothenburg (1954). For many decades, it was the centre of the leading mathematical tradition in early 20th-century Sweden, with an impressive list of professors, many of whom would have students of equal reputation.

¹ All footnotes, save the present one, are comments and annotations by the translator.

During his sojourns on the continent (during the period 1873–74) Mittag-Leffler (1846–1927) had met many of the foremost mathematicians of those times and thereby having realised the unique high regard Abel enjoyed among mathematicians. In Paris, he had listened to Charles Hermite (1822–1901) talk about Abel's groundbreaking work and tragic fate. Actually, it was the 'romance' of the tragically short life of Abel that served as an inspiration to Hermite to not only study mathematics, but also to devote his life to it.

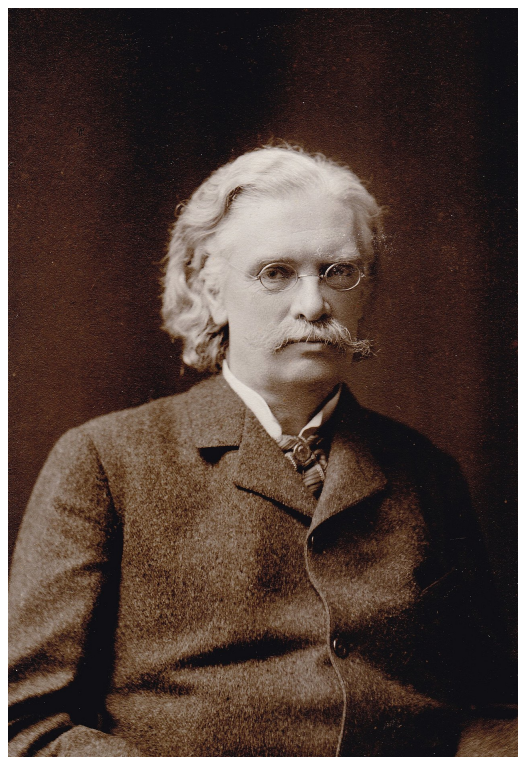
Another Parisian mathematician, Joseph Liouville (1809–1882), considered it to be the greatest regret of his life to have met Abel in Paris without really getting to know him.

A third mathematician, Adrien-Marie Legendre (1752–1833), who was the world authority on elliptic integrals, which he had studied for almost sixty years, had admitted that thanks to the young man Abel he had been able to more successfully pursue his research by having been given a new fruitful point of view. In Paris Abel was talked about in the same breath as Isaac Newton, and it was not different in Göttingen nor in Berlin.

In Berlin, he met Karl Weierstrass (1815–1897) and Leopold Kronecker (1823–1891), who claimed that the entire edifice of modern mathematics rested on the shoulders of this Scandinavian giant. Abel had also met the engineer August Leopold Crelle (1780–1855) in Berlin, a meeting that resulted in the establishing of a new mathematical journal, known as *Crelle's Journal*³. This journal supplied Abel with an outlet, and not only established his reputation, but also that of the journal.

Abel was not a misunderstood genius, his greatness was never in doubt, and his exceptional talents and potential were immediately recognised already when he was a schoolboy. The problem was just that he was too big for little Norway. He was called as a professor to Berlin, but died in tuberculosis before the news reached him.

In 1839, ten years after his death, Abel's collected works were published. This was possible to a large extent thanks to the support of the king at the time – Karl XIV Johan (1763–1844), who was French and had great confidence in the judgment of French mathematicians who wanted access to all of Abel's work⁴. But this collection turned out to be incomplete, and work on an updated



Magnus Gösta Mittag-Leffler. (© DRM / Ferdinand Flodin, CC BY-NC-SA)

revision was initiated in 1874, financed by the Norwegian government and led by Norway's most well-known living mathematicians at the time, Sophus Lie (1842–1899) and Ludvig Sylow (1832–1918) (who should be household names for every mathematician). But the project was not just a Norwegian one: several Scandinavian mathematicians of renown and critically also with administrative influence, engaged themselves. Names to be noted were the Norwegian Ole Jacob Broch, the Finn Lorentz Lindelöf and the Swede Carl Johan Malmsten, and later on the Dane Hieronymus Georg Zeuthen. A truly Nordic project indeed.

After seven years of hard work (1881), Lie and Sylow could finally present the complete collection of Abel's work. To publicise it widely, Sophus Lie travelled around, in particular, to Stockholm and Uppsala. In meeting Lie, Mittag-Leffler came up with the idea of founding a Nordic journal of mathematics. Mittag-Leffler being a man of action, already a year later the first issue of *Acta Mathematica*, referred to above, saw the light of day.

in 1905 during the reign of King Oscar II (1829–1907), a grandson of Karl Johan. The background history of how a French commoner and Napoleonic marshal ended up on the Swedish throne starting a new dynasty – Bernadotte, is too long, and besides irrelevant to the present issue, to be explained.

³ At the time academic journals almost did not exist, the works of Euler and others appeared either as books, or as communications of academies, when not simply distributed by personal letters.

⁴ As a result of the conclusion of the Napoleonic wars in 1814, Sweden was offered Norway, which had been a province of Denmark since medieval times, as a compensation for the Russian conquest of Finland, a part of Sweden. The Norwegians were not too happy about matters being decided over their heads and declared themselves an independent nation. The whole issue was resolved by forming a personal union with a common king, and common foreign policy, but where of course Sweden was the senior partner. The union was eventually dissolved

The launching of *Acta* strengthened the reputation both of Mittag-Leffler and Stockholms Höghskola, and more of the same were to come. In an audience with King Oscar II in the spring of 1884, Mittag-Leffler breached the idea of a mathematics prize, and shortly thereafter the mathematical prize of Oscar II was established. It was decided that the winner would be announced on the sixtieth birthday of the King, the 21st of January 1889, and that the winning work would be published in *Acta*, which went without saying.

Thanks to the extraordinary mathematical networking that characterised Mittag-Leffler, he was able to engage mathematicians of world rank not only to sit on a jury, but also to participate in the competition. Twelve contributions were submitted to be judged by people such as Weierstrass in Berlin and Hermite in Paris. The choice of the winning contribution was beyond doubt, namely that of Henri Poincaré (1854–1912), the young upcoming brilliant French mathematician.⁵ His contribution was, according to Mittag-Leffler, of such a calibre, that this mathematical competition would forever be inscribed in the annals of the history of the exact sciences. As many readers may be aware of, it concerned the notorious three-body problem. However, the prophecy of Mittag-Leffler was close to come true in a sense he would not have welcomed; in fact, it turned out that a proofreader discovered a mathematical mistake in the first delivered version; but this was later fixed up by Poincaré, and what could have turned out into *un grande fiasco* was avoided.

In the end, the competition turned out to be an unqualified success, but it was a one time affair, and Mittag-Leffler was well aware that future competitions could not be expected to generate similar epoch-making results, as that of Poincaré's, yet he did not abandon the idea of competitions and their concomitant prize ceremonies, hopefully to be established on a permanent basis.⁶

In order to achieve this, he approached his contacts in Stockholm's financial world as well as wealthy expatriates abroad; notably Thorsten Nordenfält in London (submarines and weapons), John Ericsson in New York (the inventor of the propeller among other things) and also, interestingly, Alfred Nobel (1833–1896) in Paris (the inventor of dynamite). Initially Mittag-Leffler suggested to set up a fund with a modest capital of about 10,000 crowns, the proceeds of which could be used to mint gold medals with portraits of the greatest mathematicians, and if so it was natural to start with the foremost Nordic one, Niels Henrik Abel.



Ludvig Sylow. (Photographer: R. Ovesen; credit: Staatliche Museen zu Berlin, Kunstbibliothek / Public Domain Mark 1.0)

2 Abel

The King was also presented with plans about a mathematical prize to be awarded every fourth year to those who had made the greatest mathematical discoveries in the interim. The prize should be a gold medal with a portrait bust of the king. The king was excited by the idea and even wanted to participate in the forming of the jury. More specifically this medal should be awarded to a mathematician who had published an exceptionally good work in *Acta Mathematica*.

However, nothing of this came to fruition, save a small fund which made it possible to invite distinguished foreign mathematicians to Stockholm, and was subsequently used for that purpose. After the great accomplishment with the collected works of Abel (1881), Ludvig Sylow returned to his modest teaching position in Halden, while Sophus Lie went to a prestigious professorship in Leipzig (1886) where he, so to speak, created a new mathematical discipline; and where consequently students from all over the world flocked to sit by his feet. And for Mittag-Leffler at Stockholm the reputation and success of *Acta* as well as that of Stockholms Höghskola were his main concerns. Thoughts about and plans for a mathematical prize were not revived and instead put on hold until the event of the grand testament of Nobel.

⁵ Incidentally, a cousin of his, Raymond Poincaré, was the French president during the First World War, and three times prime minister.

⁶ One thinks of the latter Nobel Prize, where the prizewinning ceremony takes centre stage. Also, the original Nobel idea was that the prizes were intended for work done during the previous year, makes the analogy with competitions even stronger.

3 Nobel's glorious prizes for scientific research

One of Mittag-Leffler's tasks in Stockholm also included securing financial support to Stockholms Högskola, which was predominantly based on private funds. As already mentioned, this included, in particular, the funds for Sonja Kovalevsky's professorship, for which he worked hard to renew every New Year in order to prolong her presence in Sweden. In view of those efforts, Nobel's plans to stimulate scientific research became very interesting to him.

Rumours that Alfred Nobel wanted to donate considerable sums to scientific research became widely known at the very beginning of 1890. Mittag-Leffler then offered to create a professorship to hold the name of Nobel, and invited him to Stockholm to personally announce it. But the ensuing contact between Mittag-Leffler and Nobel was riddled with misunderstandings as well as actual disagreements, which soon caused rumours to the effect that the two men competed for the favours of the beautiful Sonja Kovalevsky.⁷

Nobel dismissed out of hand all arguments Mittag-Leffler presented to show the importance of Sonja for Stockholm and Sweden. Instead, Nobel claimed to know what was best for Sonja and wrote from Paris on March 1, 1889.

I believe that Frau Kovalevsky, whom I have the honour to be personally acquainted with, would be much better suited for St. Petersburg than for Stockholm. Fruntimmer⁸ will find in Russia a wider horizon, and prejudices – that persistent European malaise⁹ are there reduced to a minimum. Frau Kovalevsky is not only an excellent mathematician, but furthermore an exceedingly gifted and sympathetic personality, whom one wishes not to remain in a winged state, confined in a small cage.

⁷ Note that Mittag-Leffler was only four years older than her, while Nobel was seventeen years older. She was in fact born in Moscow in 1850. Her father was a Russian general of the minor Belarus nobility, while her mother was ultimately of German descent. She grew up on her father's family estate in Polibino near the border to Belarus, and received an excellent education at home. At the age of 18 she married the young radical palaeontologist Vladimir Kovalevsky. It was a marriage of convenience (although a daughter issued from the union) for the purpose to be allowed to travel abroad to study, as the possibilities for women to pursue higher studies in Russia were, to put it mildly, highly constrained. She ended up in Berlin under the tutelage of Karl Weierstrass, who counted Mittag-Leffler as a student. The rest is history.

⁸ A slightly archaic Swedish word for mature women, which nowadays, at least, has a derogatory quaint. It would be interesting to know whether that was also true at the end of the 19th century (possibly as at least Strindberg uses it when in a misogynic mood), which, if so, would be interesting as it contrast against the otherwise respectful references to her. Is it a case of a mixed message?

⁹ Nobel actually uses the Swedish word 'surdeg' which literally means 'sour-dough,' but which often is used metaphorically, meaning a problem that never seems to go away but is perpetually masticated.

But the saga of Sonja came to a premature end: she died on one of the first days of 1891. For the scientific circles in Stockholm it was a great loss, for Mittag-Leffler also a great personal one, maybe also for Nobel; but the plan for a mathematical prize was given a new venue.

In Nobel's preliminary version of his testament (March 14, 1893) Stockholms Högskola was a major beneficiary. But at the subsequent death of Nobel (December 10, 1896) that institution turned out to be cut out of the will, nor was there any mention of a mathematical prize in it. On the other hand, there was money earmarked for three other sciences, physics, chemistry and medicine. That mathematics was overlooked in this way nourished speculations that there really would have been a case of sexual rivalry between Mittag-Leffler and Nobel.¹⁰ However, everything indicates that the reasons were more prosaic. Nobel was attracted less by the theoretical aspects of science and the purpose of the prizes were to further practical applications.¹¹

¹⁰ As noted above, Mittag-Leffler was more or less a contemporary of Sonja (in fact, younger than her husband), while Nobel would have been more of a 'sugar daddy,' so it was not really the case of two older men seeking the favours of a young woman. Nobel was a bachelor, Mittag-Leffler had made an advantageous match with a Swede-Finnish lady in Helsingfors (Helsinki) while being professor there. From what one gathers from biographies, the marriage was not excessively passionate. Clearly Mittag-Leffler was strongly emotionally tied to her, but what that entailed, is really not our business to speculate upon.

¹¹ In his will Nobel specified that the prizes should go to those whose discoveries had benefited mankind the most during the past year, a stipulation that was to be ignored. True, in the early years prizes in physics were geared towards inventions and awarded to engineers such as the Swede Gustaf Dalén (improvements of lighthouses) and the Italian Guglielmo Marconi (wireless telegraphy), not to mention the spectacular discovery of Röntgen, who was the first physics laureate. This latter award gave, in fact, the whole thing a flying start: X-rays were something that the general public could immediately appreciate the usefulness of, requiring no contorted explanations, which have usually been the case afterwards. But also in the early years theoretical results of fundamental scientific importance were in fact awarded as well, and then came the quantum revolution in the 1920s setting the standards. It can be noted that the Swedish academy was not at first exactly thrilled at the prospects of administering the prize, they would have preferred to send the medals and checks by mail, but were persuaded to make a ceremony out of it, without which (as Mittag-Leffler well understood) it would never have become the unique institution it now is (and ironically it now provides the main rationale for the existence of the Swedish Academy of Sciences). Both Mittag-Leffler and Nobel were entrepreneurs and businessmen, Mittag-Leffler by necessity Nobel by inclination. Nobel was an inventor and engineer, while Mittag-Leffler was motivated by idealism, although the rhetorics with which he used to describe it, nowadays strike people as slightly ridiculous. Mittag-Leffler saw mathematics as the highest achievement of the human spirit. He must have been very disappointed by the exclusion of mathematics, but he put a brave face on it, regularly inviting the laureates to dinner at his sumptuous villa in Djursholm (a



Sophus Lie. (Photographer: L. Szacinski, owner: National Library of Norway)

4 Sophus Lie steps in

In the Russian city of Kazan a mathematical prize was instigated 1894 for geometrical contributions, in particular, for those in hyperbolic geometry. Not surprisingly it was called the Lobachevsky Prize.¹² This prize was awarded for the first time in 1897, and then to Sophus Lie as already noted residing in Leipzig.

This prize and the fact that in the testament of Nobel there was no place for a mathematical prize, seems to have provoked Lie's interest to instigate a prize to be named after Abel. For that purpose he presented plans for a foundation which would every fourth year give a prize to an outstanding work in pure mathematics. Lie had of course a large mathematical network and set out to mobilise it, and

wealthy suburb of Stockholm). He is also responsible for making Pierre Curie's wife Maria a co-recipient of the prize.

¹² Nikolai Lobachevsky (1792–1856) was the first one who made hyperbolic geometry publicly known, neither Gauss nor Bolyai had published anything on it. Lobachevsky did not view it as a theoretical construct, but as a possible alternative to Euclidean geometry to describe the large-scale universe. He called it astral geometry. According to stories, Gauss tried to measure the angular sums in large triangles during his survey work. However, assuming he expected a geometry of constant curvature, he would surely have realised that the task was not practical.

soon acquired moral support from many influential mathematical centres.

Luigi Cremona (1830–1903) and Luigi Bianchi (1856–1928) in Rome and Pisa assured him of support, Emile Picard (1856–1941) wrote from Paris not only that he and Hermite wanted to contribute to the fund, but also that France as a whole, through its universities and high schools, could come up with a significant sum of money. He could also envision more frequent prize ceremonies than every four of fifth year. Gaston Darboux (1842–1917) followed up with further positive reactions and was of the opinion that every mathematician of the Academy in Paris would surely support an Abel fund. Such assurances of support were also forthcoming from Andrew Russell Forsyth (1858–1942) in Cambridge, who thought that also Lord Kelvin would be prepared to join the ranks, Felix Klein (1849–1925) in Göttingen wrote that his support for the undertaking went without saying, and he thought that both David Hilbert (1862–1943) and Lazarus Fuchs (1833–1902) would be willing as well. The only reservations emanated from Berlin, where Georg Frobenius (1849–1917) and Hermann Amandus Schwarz (1843–1921) expressed the opinion that scientific prizes in general often distracted young people from the true path.

However, all those contacts and promises of support were attached to Lie personally, so when he returned to Kristiania to a position and died a few months later (in January 1899, at the age of 57) there was no one to develop and administer all those contacts and promises, still remaining on a preliminary stage, and it all petered out.

5 The centenary of Abel's birth, 1902

The next serious opportunity for a prize or a gold medal carrying the name of Abel, naturally arose in connection with the celebration of the centenary of Abel's birth.

As noted above, Mittag-Leffler had ever since the Scandinavian meeting in Kristiania the summer of 1886 kept the upcoming jubilee in his thoughts. However, the collection of the necessary funds to erect a monument in celebration of the young genius had been poorly managed, and most likely earmarked money had already been spent domestically in the participating countries in anticipation of the memorial festivities.

In Sweden, Mittag-Leffler wanted to devote a whole issue of *Acta* to the works of Abel. He sent out invitations to potential contributors, and the response was overwhelming. Instead of a single issue, three consecutive issues (26–28) of *Acta* were eventually published with the title 'Niels Henrik Abel in memoriam,' encompassing almost 60 articles and close to 1200 pages. However, only the first issue would be ready for the celebration in the Norwegian capital in September 1902.

In Norway, work had already proceeded far on a Festschrift when Mittag-Leffler's plans for Abel in *Acta* became known. It

would contain letters by Abel (in all 44 letters to and from Abel) in addition to some documents pertaining to his life. The Festschrift would also include a biography of Abel written by the mathematician and collector of folk songs Elling Holst (1849–1915), together with an article about Abel's studies penned by Ludvig Sylow.

6 The memorial festivities, 1902

In the Norwegian capital much emphasis was on having the memorial put Norway on the map as a nation of culture, something that gained in importance as the issue of breaking up the union with Sweden was heating up.¹³

As the chairman of the festival committee the hero of Polar exploration, Fridtjof Nansen (1861–1930), had been chosen. The nestor of Norwegian literature Bjørnstjerne Bjørnson (1832–1910)¹⁴ had been tasked with writing a cantata set to music by the composer Christian Sinding (1856–1941). The King, the Storting (the Parliament) and the ministry all participated in the general celebration of a Norwegian achievement, that the Abel festivities had turned into. Furthermore, the Norwegian university bestowed for the first time honour's degrees. In fact, of the 29 chosen, ten were present, namely Vito Volterra, David Hilbert, Heinrich Weber, Émile Picard, Andrew Forsyth, Georg Zeuthen, Hermann Schwarz, Oscar Backlund, Simon Newcomb, and of course Gösta Mittag-Leffler himself.

King Oscar hosted a late supper at the palace, the bourgeois partied in Logen¹⁵; and the students arranged the largest procession ever to walk the streets of the city, brandishing torches. The National theatre set up a performance of *Peer Gynt* by Ibsen, and the newspapers, not only those of the capital but all over the country, contained extensive reports on what was going on, as well as submitted poems and prologues lauding Abel.

About seventy foreign guests met up as delegates for their respective institutions. The climax was held in the great hall of the university, Oscar II obviously was present, but also his youngest son Prince Eugén,¹⁶ together with the teaching staff, the members of the Scientific Society, specially invited guests, and with the students and other curious of the general public, watching from the galleries.



King Oscar II of Sweden and Norway. (Photographer: L. Szacinski, owner: National Library of Norway)

The King and the prince were both presented with copies of the Norwegian Festschrift, which were given to the delegates as well, with a French version for non-Scandinavians. Thereafter, many of the foreign delegates delivered short accounts of Abel and his importance. Among the speakers one can note Schwarz from Berlin, Picard, from Paris, Forsyth from Cambridge, Gravé from Kiev and Zeuthen from Copenhagen. Mittag-Leffler had of course brought the first issue of *Acta's* 'Abel in memoriam' along, and announced in his speech that two further issues would follow; and that fifty of the world's foremost mathematicians had written articles, all having in common of being based on Abel's work.

In spite of the exuberant speeches, Mittag-Leffler could not but sense that he was met with what he called a certain cold aloofness, even among former friends. And he also started to discern the reason. Rumours flourished to the effect that he wanted to make Abel a Swede and wanted to make *Acta's* 'Niels Henrik Abel in memoriam' as the real Festschrift. He was also accused of taking the personal responsibility for the presence of so many distinguished foreign mathematicians in the Norwegian capital. The claim that Mittag-Leffler wanted to make Abel Swedish was founded on an incident at his fiftieth anniversary (1896), when the French mathematician Paul Émile Appell (1855–1930) had sent his best wishes attaching Abel to Mittag-Leffler's 'fatherland', and according to the rumour, Mittag-Leffler had not done anything to rectify the mistake, it had even been suggested that

¹³ To be completed in 1905, as (foot)noted above.

¹⁴ Henrik Ibsen, by far the internationally most well-known Norwegian writer was still alive, but Bjørnson (Nobel Prize in 1903) was more influential on the domestic scene, not only as a poet, but also as a polemicist and debater on cultural issues. Incidentally, he wrote the lyrics to the Norwegian national anthem.

¹⁵ A concert hall and general music venue, which also hosts banquets and conferences, situated in Oslo and built and inaugurated in the 1830s.

¹⁶ A highly respected landscape painter in Sweden, a testimony to the artistic temperament and talent exhibited by the Bernadotte dynasty.

Mittag-Leffler himself had supplied Appell with a sketch of the message.

That the cloud of suspicion still rested above his head in the Norwegian capital he once again experienced when he tried to have published in the papers a speech he had given to the Norwegian students. In order to have this accomplished, he had to appeal to Bjørnson to stand up for him and assure them of his pro-Norwegian stand, that, in fact, he belonged to the most pro-Norwegians in Stockholm.

To his old friend, the geologist Waldemar Christopher Brøgger, who was now the president of the university, he commented on the baseless accusation that he wanted to make the Abel festivities a Swedish one, and assured him that he would have done the same, had Abel been French, German or English.¹⁷

7 Nachspiel, 1902

Norwegian politicians and scientists formulated three principal tasks for the memorial festivities.

- (1) To arrange a memorial event with a general cultural aim.
- (2) To erect a dignified monument to the mathematical genius.
- (3) To establish an international Abel Prize.

The first two of those objectives were resolved, even if the big Abel statue by Gustav Vigeland (1869–1943)¹⁸ was not finished and displayed until six years later. But what about an Abel Prize?

After the official end of the celebrations, the king announced that he wanted to have gold medals minted to the memory of Niels Henrik Abel. It seems that the plan was the medal would be awarded by the university of Kristiania every third year to mathem-

atical achievements of the first rank. Oscar II, who after his active support of *Acta Mathematica* and his eponymous mathematical prize (1889) was considered somewhat of a patron saint of mathematics, now seemed to go out on a limb in his predilection for mathematics.

On the Swedish side Mittag-Leffler feared that an Abel Prize would be overshadowed by the Nobel Prizes (which were awarded for the first time in 1901). He despaired of finding another patron who would be able to lift it up the level of the those prizes.¹⁹ He also meant that it would be easier for a jury to come to an uncontroversial decision if they only had to judge solutions to a given problem, preferably connected to the works of Abel.

On the Norwegian side the mathematicians Ludvig Sylow and Carl Størmer (1874–1957) were appointed to head a committee to work out the statute of an Abel Prize. In the fall of 1904 they presented their suggestion, but the work had hardly begun when the political crises of the dissolution of the Union with Sweden erupted. Any plans for an Abel Prize were put on hold again, more or less permanently it appeared, as testified by the letter by Nansen to the mathematician Elling Holst.

*That by the blessed King Oscar promised Abel Prize ascended to Heaven along with the Union.*²⁰

8 Postscript

It would take another century until the idea of an Abel Prize was not only revived but even realised. This is another story which has already been told, see [K. G. Helsvig, The Abel Prize: The missing Nobel in mathematics?](#), *Centaurus* 56, 1–30 (2014).

Suggested further reading

- [1] J. Gray, A history of prizes in mathematics. In *The millennium prize problems*, Amer. Math. Soc., Providence, RI and Clay Math. Inst., Cambridge, MA, 3–27 (2006)

¹⁷ I guess meaning that in this case the accusations of usurping him as Swedish would have been too absurd to be taken literally. This bespeaks a certain sensitivity on the parts of the Norwegians, which is however quite understandable. The Scandinavian countries formed a Union (the Kalmar Union) in 1397, in which Denmark was the dominant member; Sweden broke out in the early 16th century, and centuries of military rivalry between the two countries ensued where Denmark found itself repeatedly on the receiving end. It was not until the early 19th century a feeling of Scandinavian brotherhood sentimentally formed. This was also the time when the notion of nationalism got established, namely the powerful but potentially pernicious idea of states being founded on natural ethnic principles, as opposed to formal corporate ones. This clearly inspired the modern sense of Norwegian nationhood that was further developed during the 19th century. Resentment of being the junior partner and the Swedish domination grew, and relations between the two brotherly people (in the rhetorics of Oscar II) soured to the point of almost coming to blows. However, what can most aptly be described as a potential civil war, was avoided by mutual diplomatic efforts. The pride of Abel was part of Norwegian independence, but even more so the arctic exploits of Nansen and Amundsen put Norway on the map.

¹⁸ Norwegian sculptor who was widely employed in public assignments. There is a large part of the Frogner park in Oslo devoted to his sculptures.

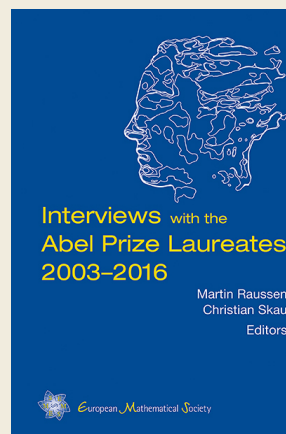
¹⁹ As noted above the choice of Röntgen caught the admiration of the public, and thus established its prestige right away, as hinted in a previous note.

²⁰ This letter by Nansen was obviously written after the split up between Sweden and Norway (in fact, on December 7, 1906) but *before* the King had died (1907). In Nansen's original Norwegian one reads *den af salig Kong Oscar lovede Abelpreis*... using the word 'salig,' which literally means something like *blissful* and in Christian religion more like being *blessed*, more particularly it refers to someone who has been saved and hence been granted eternal life (which is assumed to be blissful). In particular, it means someone who has gone to Heaven (the ultimate goal). Thus it can be used as a euphemism for someone being dead. Whether this was a trivial slip by Nansen, or intentional, we can only speculate upon.

- [2] K. G. Helsvig, *Elitisme på norsk: Det Norske Videnskaps-Akademi 1945–2007*. Novus, Oslo (2007)
- [3] A. Stubhaug, *Niels Henrik Abel and his times: Called too soon by flames afar*. Springer, Berlin, Heidelberg (2000)
- [4] A. Stubhaug, *The mathematician Sophus Lie: It was the audacity of my thinking*. Springer, Berlin, Heidelberg (2002)
- [5] A. Stubhaug, *Gösta Mittag-Leffler: A man of conviction*. Springer, Berlin, Heidelberg (2010)

Arild Stubhaug (born in 1948) is a writer of fiction and biography with an honorary doctorate from Oslo University. His biography *Niels Henrik Abel and his times* was followed by biographies about the mathematicians Sophus Lie and Gösta Mittag-Leffler. He has won numerous awards, including the Norwegian Language Council Prize, the Norwegian Academy Prize and the Dobloug Prize awarded by the Swedish Academy. arild.stubhaug@gmail.com

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