

Death on a glacier

The motor sledges failed. Most of the Greenlanders turned back, taking 12 dog teams with them. The furious winds and temperatures more than 50 degrees below zero heralded the oncoming winter night and battered the remnants of what was supposed to be a relief mission. But Alfred Lothar Wegener pushed on to meet the two men at the research outpost called *Eismitte*, or Mid-Ice, 250 miles inland at the center of the funereal whiteness of the Greenland icecap.

Wegener, seasoned by two extended Greenland campaigns, well knew how deadly, fickle and vast the icebound wastes could be. He first went to the island with the Danmark Expedition of 1906 to 1908. Ludwig Mylius-Erichsen, the leader, and two others were felled by low temperatures and starvation as they tried to return from a trek along the northeast coast in the summer of 1907. Wegener again set foot on Greenland's shores in September 1912 as a member of a team led by Johan Peter Koch, a fellow veteran of the Mylius-Erichsen expedition. A number of members of the team, including Wegener, were nearly killed by an ice fall while ascending the glacier. Two months after their arrival, Koch fell 50 feet into a crevasse and broke

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his leg.

Koch recovered and in April 1913 he, Wegener, five Icelandic ponies and a dog set off on a 700-mile crossing of the icecap. Gales and blizzards halted the men and animals as they ascended the nearly 10,000-foot-high expanse of ice. Because of the delays, food ran short. The ponies suffered from snow-blindness, succumbed to exhaustion, and had to be killed. The pair reached the west coast on July 4, but were miles away from the nearest settlement. They rested, cached what they couldn't carry and made for Pröven, their planned destination. A severe storm pinned the men down for 36 hours. Finally, the weakened men were forced to sacrifice the dog. As they were about to eat, Wegener and Koch were rescued by Inuit and returned to civilization.

Wegener had accomplished much during his first two Greenland journeys. He pioneered the use of balloons and kites to measure the characteristics of the atmosphere over the icecap and established a reputation as a polar explorer. His reputation led to his return to the island 16 years after his and Koch's near-death experience. But Wegener's fate, it seemed, was leading him into frigid oblivion in the center of the ice.

After his second trip to Greenland, Wegener served in World War I as a reserve lieutenant with Germany's Queen Elizabeth Grenadier Guards. He didn't shy away from exposing himself to danger, and was wounded twice in 1914 while fighting in Belgium. The second injury – in the neck – put him out of combat. After a lengthy sick leave, Wegener spent the remaining years of the war in the military weather service. Afterward he resumed his scientific career.

Trained in astronomy and physics, but in practice more a meteorologist, Wegener worked in diverse disciplines. In 1911 he wrote a textbook on the physics of the atmosphere. In 1921 he

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published a prescient monograph, “The Origin of Moon Craters,” in which he showed through a series of experiments with powdered cement that the craters were most likely created by meteorite impacts than by volcanic action. Wegener and his father-in-law, climatologist Wladimir Köppen, weighed in on paleoclimatology in their 1924 monograph, “Climates of the Geological Past,” that offered crucial support to Milutin Milankovitch’s theory that variations in the Earth’s orbit, which affected the amount of solar radiation reaching the atmosphere, played a role in the rise and fall of the ice ages. In the years before his second trip to Greenland, he developed another theory, which wasn’t received very well by the scientific community. That theory was called continental drift.

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Greenland reclaimed its hold on Wegener’s life during Easter 1928 when Wilhelm Meinardus, a geography professor from the University of Göttingen, asked if he would be interested in leading a small summer expedition to determine the thickness of the icecap. Wegener knew there was much more that could, and should, be done. Within weeks he laid a counter-proposal before the *Notgemeinschaft der Deutschen Wissenschaft*, a consortium of German colleges, universities, learned societies and the Weimar Republic, that was to fund the expedition.

Wegener still proposed to measure the thickness of the ice as well as study a number of other characteristics of the icecap. He also added a battery of meteorological and climatological studies to the agenda. His coup, however, was to suggest overwintering on the ice, not just at one site, but at three along the 71st parallel: one each at the eastern and western edges of the glacial massif and one in the middle, i.e., *Eismitte*.

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Wegener, accompanied by Johannes Georgi, Ernst Sorge and Fritz Loewe, returned to the west coast of Greenland in 1929 to test equipment and techniques for measuring the thickness of the ice and, most importantly, to determine the best base from which to ascend the icecap.

Sailing up Umanak and Kamarujuk fiords, they found a suitable candidate, Kamarujuk Glacier, a half mile- to mile-wide tongue of ice bounded by steep valleys which led to the icecap 3,280 feet above sea level. Wegener decided to establish the western station at the base of a nearby peak, Scheideck Nunatak. As the waters off the west coast of Greenland had the longest ice-free period, *Eismitte*, 250 miles inland, would have to be established and supplied from Scheideck.

Wegener worked feverishly throughout the winter to organize and supply the expedition. In addition to himself, Georgi, Sorge and Loewe, he selected 17 men for the journey. Three were to work independently at the eastern station, which was to be based in Scoresby Sound. Georgi and Sorge were to overwinter at *Eismitte*, and the rest, including Wegener, were to be based at Scheideck to conduct their own research and to support the pair at *Eismitte*.

On April 1, 1930, Wegener, with all but three members of the Scheideck and *Eismitte* parties and enough supplies to fill nearly 10 rail cars, set sail from Copenhagen, Denmark, on board the *Disko*, the biggest ship that traded with Greenland at the time. The *Disko* called at Reykjavik, Iceland, to pick up three Icelanders, including Vigfus Sigurdsson – a companion of Wegener's on the Koch expedition – and 25 Icelandic ponies, and arrived at Holstensborg, on the west coast of Greenland, on April 15.

The *Disko* was not built for sailing in the icy conditions that still prevailed farther north, but arrangements had been made for the *Gustav Holm*, fitted with ice sheathing and a crow's nest to aid maneuvers through pack ice, to meet them in Holstensborg and carry the party to Umanak

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Fiord. The *Gustav Holm* arrived on April 19. The cargo, men and horses were transferred, and they departed on April 27.

The *Gustav Holm* was tightly packed, and the cargo, laden with items such as gasoline, dynamite, detonators and hay, was cause of not inconsiderable concern.

“We have a d—d risky cargo on board,” Wegener wrote in his diary entry of April 30. “If fire breaks out we’re done for; no hope of putting out petrol. The only consolation is that we shall have a very imposing and expensive cremation ceremony.”

Fortunately, no such ceremony occurred. The *Gustav Holm* called at Godhavn before heading for Umanak on May 3. Now the difficulties began. Arriving off Umanak the next day, Wegener and his men found that ice blocked the path to Kamarujuk Fiord, where they had hoped to land. The *Gustav Holm* anchored off the Kekertat islands. With the aid of the ponies and dog-sled teams, they began unloading the ship at the edge of the ice and setting up a depot at Uvkusigsat, six miles away. By May 10, they had finished unloading and were given a hearty send-off by the *Gustav Holm* before it sailed away.

Wegener and his men were all but stranded at Uvkusigsat. The ice separating them from Kamarujuk was too thick to allow a ship to get through, yet too rotten in areas to trust with the weight of ponies or heavily laden sledges. They could reach Kamarujuk using a combination of lightly packed sledges and collapsible boats, but couldn’t move any of their heavy equipment – including huts and the motor sledges – until the ice broke up. Most of the time the men waited. Sometimes they would try to blast their way through with dynamite. But the ice and weather didn’t cooperate.

“Whit-Monday, thirty-first day of waiting,” Wegener wrote from a camp at Kamarujuk on

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June 9. "Weather gloomy and my mood ditto. From our view-point on the moraine we can still see the ice fast in Ingnerit Fiord. The programme of the expedition is getting seriously endangered by the refusal of the ice to move. Time is slipping by, and anything we can do here in the absence of ponies and baggage really amounts to very little."

Wegener and his men waited 38 critical days, until June 17, before they could reach the narrow, stony beach at the foot of the glacier with the schooner *Hvidfisken* and the *Krabbe*, a small boat Wegener used on the expedition the previous year, and set up their base.

The men then unloaded 2,500 boxes, cases and cans. They pitched their tents in the shelter of a moraine and began to organize their supplies. To get the motor sledges to the top they would have to build a road on the glacier. In the meantime they used ponies and dog teams to begin hauling up supplies in preparation for the first big sledge journey inland.

Wegener's presence was required at Kamarujuk helping to set up the western station. Thus he could not accompany Georgi, who with Loewe, Karl Weiken, 10 Greenlanders and 12 dog teams set off to set up *Eismitte* on July 15. Difficulties arose almost immediately. The next day most of the Greenlanders, who dreaded traveling on the icecap, thought the load was too heavy for the deep, soft snow they encountered. Georgi cached three boxes of equipment, weighing 300 pounds, and 200 pounds of stores. Even with the reduced weights the Greenlanders needed to be persuaded to go along. According to plan, two of the Greenlanders turned back toward Scheideck on July 17. The rest of the Greenlanders were ready to turn back again on the 18th because of a misunderstanding over the distribution of rations.

The party reached the 62½-mile mark on July 19. As they went along they marked the route by erecting snow cairns with route markers every five kilometers (about three miles) and

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black flags on 3-foot-long staves every 500 meters (about 550 yards). On the 22nd they reached 125 miles. At this point the party was to split up. Loewe was to return with four Greenlanders while Georgi, Weiken and the four remaining Greenlanders were to push on. But crisis erupted again as the Greenlanders as a body refused to go further, claiming they “would be unable to breathe, the dogs would die, and at the end they themselves would have to march on foot and eat their boot-soles to still their hunger.”

After several hours of intense negotiations – hindered by language differences – the Greenlanders relented when Loewe threatened to go on to *Eismitte* with Georgi and Weiken and leave the Greenlanders to find their way back to Scheideck alone. At the Greenlanders’ insistence, Georgi further reduced the load of supplies slated for *Eismitte*. Then he, Weiken and the rest of the 250-mile party forged on. At 6 p.m. on July 30 the men reached the 250-mile point. The next day they put up the tent and hut, unpacked the supplies and assembled some of Georgi’s scientific instruments. Georgi wrote letters to his family and to Wegener, giving them to Weiken to take back to Scheideck. Weiken and the Greenlanders left Georgi alone at *Eismitte* on August 1.

If all had gone according to plan, *Eismitte* would have been resupplied by a combination of three dog-sledge trips and one or two motor-sledge trips. Loewe reached *Eismitte* with a second dog-sledge party on August 18. Sorge, accompanied by Kurt Wölcken, Hugo Jülg seven Greenlanders and 10 dog-sledge teams, joined Georgi on September 12. But the motor sledges never appeared.

The two motor sledges were specially built for the Wegener expedition by the Finnish state aircraft factory in Helsingfors, Finland. The sledges, christened the *Schneespatz* and

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Eisbar, looked something like a toad with a huge propeller mounted on the back (much like the airboats used in the Everglades), and were mounted on four broad skids of hickory with rubber springs. The front skids could be turned like the wheels of a car. Each sledge contained a cabin for the driver and plenty of storage space. They were powered by a 110 horsepower Siemens aircraft engine and carried a 63-gallon fuel tank.

The Finns used motor sledges with great success to travel between islands off their coast in winter. But travel at sea level was different than at several thousand feet above. The sledges were often buried in snow or frozen in during inclement weather. If the skids weren't encased in ice and snow, then the propeller or engine frequently froze up. Their fuel consumption was high in the deep, soft snows that fell on the icecap, especially if the driver had a difficult time following the trail.

Regardless, Curt Schif and Georg Lissey, in the *Schneespätz*, and Franz Kelbl and Manfred Kraus, in the *Eisbar*, set off from the 53-mile depot for *Eismitte* on September 17. Much of their load and additional fuel had already been cached at the 125-mile depot, which they reached in five hours. There they met the Wölcken and Jülg party returning from *Eismitte*. The next morning the motor-sledge crews were beset by thick mist and driving snow. While the dog teams, which could travel in virtually any weather, left for Scheideck, the motor-sledge party had to wait. They could ill afford to get lost under those conditions.

On that day and the next, the sledges were nearly snowed in. When the weather improved on the 20th, the *Eisbar's* engine started with difficulty, while the *Schneespätz's* engine would not budge. Eventually it yielded – after being heated for an hour and a half by a primus and soldering lamps – but the men were too exhausted to do anything else after hours of struggle at

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8,200 feet. The weather was again dismal the next day. On the 22nd, the weather improved, but the heavy drifts and fierce headwind prevented the sledges from making any progress toward the east. There was no way the motor sledges could make *Eismitte* with a load. Thus, only a day away from their destination and running out of their own supplies, the motor-sledge crews were forced to turn back.

Among the casualties of the failed motor sledge trip were three items: a winter hut Georgi and Sorge were to live in, more food, extra paraffin for fuel, and a wireless for communications with Scheideck. Georgi and Sorge discovered they could survive the winter in an ice castle carved out of the snow. After some calculations, they determined that their food and paraffin supplies would last them until the following spring, when they expected to be relieved. The least important item for their immediate survival was the wireless. But the lack of the wireless was to play a crucial role in the tragedy that followed.

If all had gone according to plan, either the motor sledges or a fourth visit by dog-sledge teams should have reached *Eismitte* by September 20. Georgi and Sorge initially had planned to leave and make their way back to Scheideck by man-hauled sledges if no further relief had arrived by October 20. Without the wireless there was no way for them to let Wegener know they had enough supplies to survive the winter and had decided to stay.

Late in August Wegener realized another dog-sledge journey would probably be needed to fully provision Georgi and Sorge at *Eismitte*. On September 4, he asked Weiken and Loewe to begin planning to take a 15-sledge trip. Deeply worried about the welfare of Georgi and Sorge, however, he decided on the 18th to go on the journey himself and left Weiken in charge of the expedition at Scheideck.

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Three days later Wegener, Loewe and 13 Greenlanders departed Scheideck, meeting the returning Wölcken and Jülg party only a few miles out. On the 24th, at the 31-mile mark, they met the motor-sledge party and learned that the sledges had not reached *Eismitte*.

Wegener didn't need to see the clouds rising in the west that afternoon to be troubled by the lack of progress. He cut the load planned for *Eismitte* by 1,600 pounds and arranged to send a Greenlander, whose sledge had fallen apart, back to Scheideck on one of the motor sledges. By the next morning the storm arrived. A raging blizzard kept them confined to camp for the next two days.

The weather cleared by the morning of the 27th, but a stiff easterly wind and temperatures as low as 17 below zero limited the progress of Wegener's party to just seven-and-one-half miles. That night, the Greenlanders ominously gathered in one tent. Wegener and Loewe knew something was brewing. The next morning the Greenlanders entered Wegener's and Loewe's tent. At first, they said nothing, just staring at the ground and pulling at their pipes. Finally, one spoke up and announced that they wanted to turn back.

After a long talk and promise of higher pay, four of the Greenlanders, Detlev Frederiksen and Rasmus Villumsen of Uvkusigsat and Nikola Sakiussen and Johann Amossen of Kekertat, agreed to continue. Wegener gave the others a letter to take back to Weiken.

“The whole business is a big catastrophe and there is no use in concealing the fact,”

Wegener wrote. “It is now a matter of life and death. I will not ask you to do anything to ensure our safety on the return journey, for there are plenty of depots. The only help you could render us would be the psychological one of sending a party out to meet us; but in October that would again involve considerable risk to the relief party. I do not consider

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Sorge's plan of setting out on 20th October with man-hauled sledges feasible; they would not get through but would be frozen to death on the way. – We shall do what we can and we need not yet give up all hope of things going well. But good traveling conditions seem to be definitely over now. Even the journey here was very strenuous, and what lies ahead is certainly not a pleasure trip.”

The loss of eight dog-sledge teams forced Wegener and his men to drastically cut the amount of supplies for *Eismitte*. On September 29 – nine days after some kind of relief party was scheduled to have reached Georgi and Sorge – six men, six sledges and 69 dogs left for *Eismitte* carrying barely two tons of provisions for the station. Wegener and his greatly reduced party still had nearly 212 miles to go.

Wegener and his men reached the 75-mile cairn on October 1. By now Frederiksen was saying that he was tired and wanted to turn back. Wegener again persuaded him to continue. Another snowstorm pinned them down for a day and forced Wegener and his team to cache the rest of the supplies they had planned to take to *Eismitte*. Paraffin, the most critical of the supplies needed at *Eismitte*, could be picked up at the 125-mile depot.

On the 3rd the party trudged on, but the deep, fresh snow became an almost insurmountable obstacle, even for the nearly empty sledges. In the summer, the dog-sledge teams averaged at least 18 miles a day, but over the next three days Wegener's party had only covered 19 miles. At the rate they were traveling, Wegener realized there was not enough food for the men and dogs of all six teams to make it to *Eismitte* and back.

On the night of October 5, Frederiksen was again saying that the Greenlanders wanted to return to Scheideck. Wegener considered giving up the quest, but Loewe convinced him that

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they could make the station with one of the Greenlanders. At first Sakiussen volunteered to continue, but after everything was repacked and reorganized, he changed his mind and began offering excuses why he should not go on. Finally, on the 7th, Villumsen said he would leave for *Eismitte* with Wegener and Loewe. The parties split up. Wegener sent another letter back to Weiken at Scheideck. He realized the desperate straits he was in, and had changed his mind about a relief party, asking Weiken to send one – consisting of no more than two men and two dog teams – to the 38½-mile depot. Frederiksen, Sakiussen and Amossen reached Scheideck on the 15th. Wegener, Loewe and Villumsen would not have it so easy.

The weather and deep snow drifts limited their progress to just 12 miles over the next three days. The flags marking the trail were often buried. Fortunately, Villumsen had a knack for spotting what little of the tips remained visible. The lead dogs sank to their bellies in the snow. The sledges, weighing 500 pounds, frequently became stuck, and the men – often wading knee-deep through the drifts – struggled to get them moving again. Facing temperatures less than 22 degrees below zero, the trio rested on October 10 and reassessed the situation.

Wegener and his men had about two weeks of food left. They tentatively made plans to cache what supplies remained at 143 miles and turn back. But conditions improved on the 11th. They instead decided to continue until they either reached *Eismitte* or met Georgi and Sorge on the path.

The party made reasonable progress from then on, but low temperatures and lack of food for the dogs began to take their toll. Loewe began to suffer from frostbite on his hands and feet. The dogs were weakening. By October 24 they had reached 208 miles. They stayed in their tents on the 25th, as the temperatures never rose above 40 below zero.

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The temperature, however, continued to drop, hovering around 58 below zero from now on. Wegener, Loewe and Villumsen persisted. The moisture in the breaths of men and dogs froze immediately, enshrouding them in clouds of ice crystals that trailed the party for half a mile. Grasping anything was painful, making an ordeal of the tasks of setting up and striking camp and untangling the dogs' traces. The pemmican for the dogs had to be broken up with an axe.

Loewe noticed that he had no feeling in his toes on the 27th. Despite hours of massages from Wegener, the circulation could not be restored. The last of the dogs' food was used up on the 28th. The last of the paraffin was consumed by the morning of the 30th, but by then they were close. Wegener, Loewe and Villumsen trudged the last few miles to *Eismitte* in a temperature of 62 degrees below zero and arrived at 11 a.m. The temperature inside Georgi and Sorge's ice cave was a balmy 23 degrees.

There was no way all five men could survive the winter at *Eismitte* with the meager supplies at hand. Loewe, with his severely frostbitten feet, would have to remain, but Wegener and Villumsen had to take their chances with the weather in the interest of saving the other men's lives.

"Wegener wants to start back with again with Rasmus very early to-morrow morning;" Georgi wrote on October 31 in a letter he sent back with Wegener, "with their dogs pretty well worn out it is a race with death."

On the morning of November 1 the men celebrated Wegener's 50th birthday with sandwiches and preparations for his and Villumsen's departure. Photos of the pair were taken before they left. Both men were tightly bundled in reindeer skins and furs so that only parts of

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their faces were exposed to the elements. Ice collected on Wegener's moustache and set it in stark contrast to his grime-darkened skin. Then the two headed off to the west in a temperature of 40 below zero.

Wegener and Villumsen never reached Scheideck. In the spring, relief parties found Wegener's body alongside the trail 118 miles from Scheideck. It had been carefully buried by Villumsen, who then left carrying diaries, letters and other odds and ends. More traces of Villumsen were found at a campsites between 118 and 106 miles. Beyond that, though, his trail vanished in the seemingly boundless wastes.

Wegener did everything he could to make sure the men at *Eismitte* were safe, despite the cost – his life. That dogged determination to do what he thought was right was evident throughout his career, especially in the defense of his crowning intellectual achievement. For nearly 20 years Wegener had nurtured one of his theories – continental drift – that met with unimaginable, and, in retrospect, unreasonable hostility within the scientific community. Despite the abuse from his colleagues, Wegener never gave up. He constantly modified the theory, bolstered it with additional evidence, and published three revisions to the monograph, “The Origin of Continents and Oceans,” in which he presented his ideas. The final edition was published the year before he died.

By the time he died, Wegener and continental drift was anathema to most Earth scientists, and remained so for decades. But scientific facts eventually resurrected the debate and in turn resurrected Wegener's reputation. For continental drift proved to be the spark that ignited one of the greatest revolutions in the history of science.