

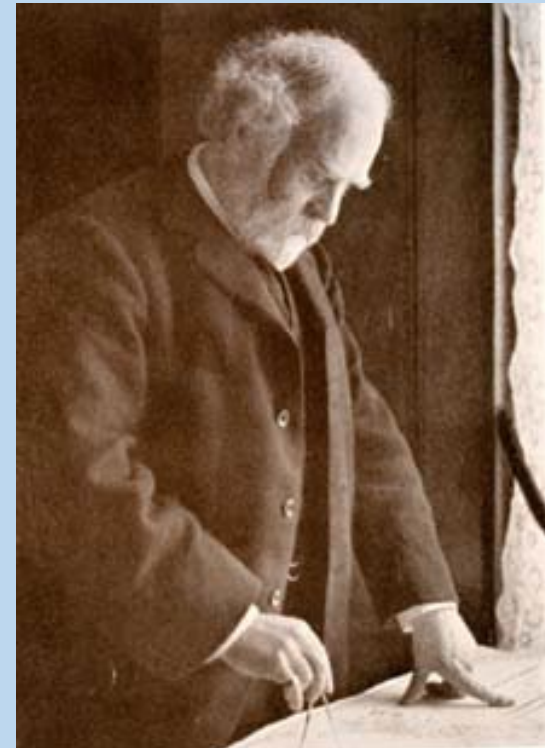
The 'Heroic Age' in Antarctic History 1901-1922

Actually has roots in the 1890s as after the voyages of James Clark Ross, Antarctica was largely ignored for over 40 yrs

In 1893, Sir John Murray, naturalist from the HMS Challenger expedition and considered the father of modern oceanography, gave a lecture "The Renewal of Antarctic Exploration", to the Royal Geographical Society

This gave impetus for more research in the Antarctic that eventually resulted in the first time men had reached the geographical and magnetic south poles

The term 'Heroic Age' was given later to this period because of the hardships endured by the men in these expeditions, plus the science, photography, and even poetry that emerged from it.



In 1893, a Norwegian, H. J. Bull, set out to revive the whaling industry in the Southern Ocean

Stopped in Australia and took on Carsten Borchgrevink as part of the crew

Continued south and crossed the Antarctic Circle, hit pack ice and headed for Cape Adare at the entrance to the Ross Sea

If they could make a successful landing there, they would be the first people to ever set foot on the Antarctic continent

Iced in at first, so couldn't land and went on to Possession Island and landed there. Found the first lichens south of the Antarctic Circle





Possession Island



Cape Adare





On 18 January 1895, Captain Bull and a landing party including Borchgrevink landed on Cape Adare, the first true landing on the Antarctic continent

Later that year, Borchgrevink gave a lecture in London and added to Murray's call for more research and exploration in Antarctica

If I have gone into all these details, it is only to show that photography of clouds is a very easy operation, and within the reach of all amateurs. And let me just add, that with the darkest screen (saturated bichromate) and Prazmowski's lens, with a focus of 160 millimetres, and diaphragm of $\frac{1}{30}$, I obtain negatives with a maximum exposure of six seconds for cirrus, with an ordinary amount of light with a Zeiss' object-glass, a diaphragm of $\frac{1}{15}$, and very bright cirrus, having an exposure of $\frac{1}{30}$ of a second, has sometimes been more than sufficient, even too much.

It would be very interesting if amateurs in photography, so numerous at the present time, would try to photograph clouds which strike them as having interesting shapes, noting with care the hour when they were taken, and also the direction in which the clouds appeared.

SCIENCE IN THE MAGAZINES.

ONE of the most interesting contributions to this month's magazines is an illustrated account in the *Century* by Mr. Borchgrevink, of his voyage in the *Antarctic*, prefaced by a note by Mr. A. W. Greely. The article will give an impulse to the movement in favour of an expedition to explore the Antarctic continent. Referring to Mr. Borchgrevink's account, Mr. Greely says: "From a scientific standpoint the interest depends entirely upon the discovery by Borchgrevink, on Possession Island and Cape Adare, Victoria Land, of a cryptogamous growth, probably an unidentified lichen. The importance of this discovery rests in the fact that hitherto no land vegetation of any kind or description had been found within the confines of the Antarctic circle. The strained deduction has been drawn that the climatic conditions of the Antarctic zone must have changed since the voyage of Ross, who discovered no vegetation. It should be borne in mind, however, that the great botanist, Sir Joseph Hooker, who served with Ross, was unfortunately prevented from landing with his commander; otherwise it may not be doubted that low forms of vegetable life which escaped the attention of Ross would have been noted by Hooker. In a practical way it emphasises the possibility of much more extended exploration in the Antarctic Ocean, through the agency of the steam-power of to-day, than was practicable for the greatest of Antarctic navigators—Cook, Balleny, Weddell, Wilkes, and Ross—under sail alone in the past."

enterprise is the so-called "bicycle" arrangement, by which a single line of wheels run on single rail. The train is to be kept upright by an auxiliary rail on each side, which will not, however, come into play except in rounding curves.

In the *Popular Science Monthly* Prof. G. F. Wright discusses the "New Evidence of Glacial Man in Ohio," afforded by a small chipped chest implement found by a trustworthy observer close to Brilliant Station on the Ohio River. He concludes that the discovery "must go far to close the question of man's antiquity on the Western continent, and to dispel the doubts upon the subject which, for one reason or another, have heretofore existed." Prof. James Sully continues, in the same magazine, his "Studies of Childhood," and among the other articles are "The Anatomy of Speed Skating," by Mr. R. Tait McKenzie; a criticism by Mr. Le Sueur of Prof. Forbes' article on the work of the Cataract Construction Company, published in *Blackwood's Magazine* for September 1895; "Health Experiments in the French Army," by Mr. Stoddard Dewey; and "Prehistoric Engineering at Lake Copais," by Mr. J. D. Champlin.

Mr. W. H. Mallock continues in the *Contemporary* his essay on "Physics and Sociology." He holds that the struggle which causes social progress is a struggle of the few against the few, and is fundamentally different from the Darwinian struggle for existence. In his words: "Within the limits of the minority, composed of the exceptionally gifted, whether their gifts are those of scientific knowledge, or knowledge of men's characters and wants, or of a power to direct men, there does undoubtedly take place a struggle strictly analogous to that with which Darwinian science has familiarised us, the result being, as Mr. Spencer's celebrated formula expresses it, the survival of the fittest. Only it is not a struggle for existence, if the word existence is taken to mean life; it is a struggle for existence in a position of rule or domination. It is, moreover, not a struggle with the majority of the community, but with the minority only. The fittest, the survivors, the winners, instead of depriving the majority of the means of subsistence, on the contrary, increase those means, and their unsuccessful rivals are defeated, not by being deprived of the means of living, but only of the profits and privileges that come from directing others. That there is a subsidiary struggle amongst the majority, a struggle to obtain work, not to direct work, is true, as has been said already; but, as has been said also, this is not the struggle which primarily either causes the advance of civilisation or maintains such advances as have been made. It contributes to these results, and how far

At the same time Captain Bull was exploring east Antarctica, Belgium had sent their first expedition to the Antarctic Peninsula

The ship *Belgica* was commanded by Adrien Victor de Gerlache, a young naval officer who pushed for the expedition and raised the funds from private and government sources



It was a scientific as well as exploratory expedition and included an international team. Key people included:

Henryk Arctowski, a Polish geologist

Frederick A. Cook, an American doctor

Roald Amundsen, a 25-yr Norwegian crew member

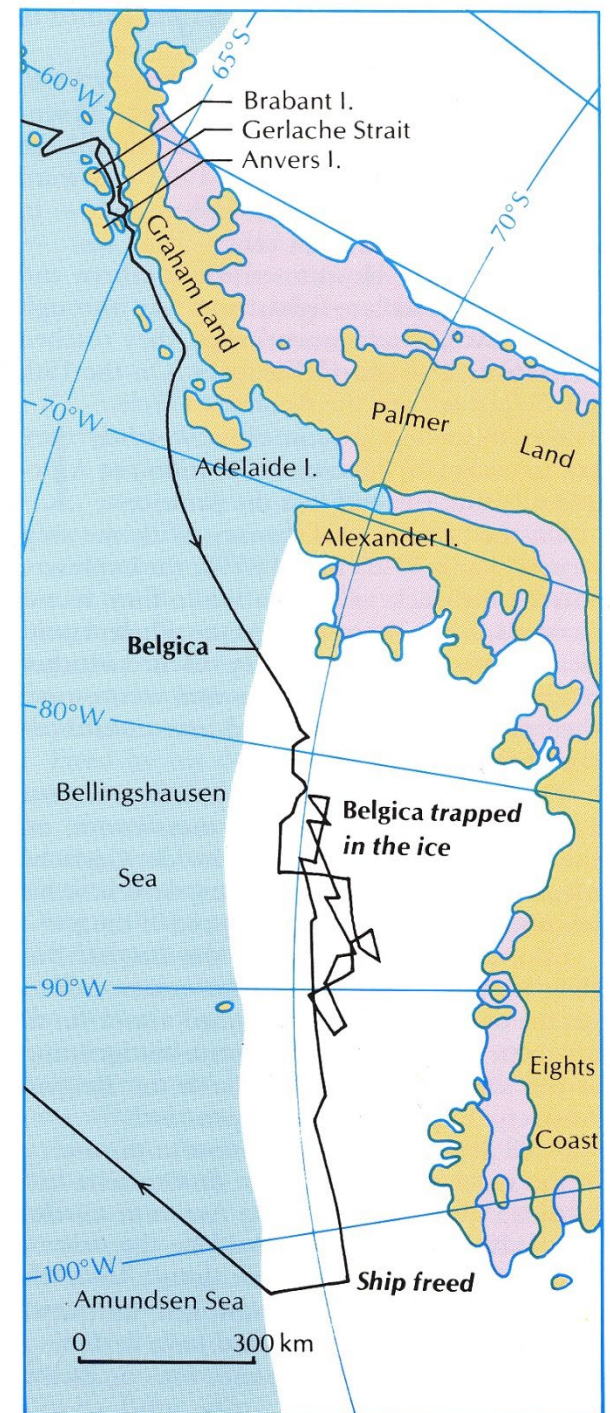
The ship departed Belgium in August 1897 and reached Punta Arenas, Chile on 1 December. Some crew deserted there, but the rest went on to explore parts of Tierra del Fuego until Dec. 14.



The delay in Chile cost them as they didn't arrive in the AP until late January and met with bad luck almost immediately.

A gale hit them and caused damage, one young crew member was lost overboard and couldn't be rescued

After the storm they continued along the peninsula and found a strait between the islands and the mainland, now known as Gerlache Strait, and considered to be his most important discovery on this expedition



They continued mapping and surveying and turned south towards Alexander Island and past the Antarctic Circle

Hit pack ice and went too far into it, getting stuck and frozen in for the winter

Disagreements among crew about whether or not Gerlache did this intentionally, but they would be the first to ever over-winter in the Antarctic

Although trapped in ice, the ship began to drift with the pack, 6-8 km per day

It would be 13 months before they were freed from the ice



Trapped in a small area with the long Antarctic night closing in, the crew became a test case for what happens to people in such an enclosed, isolated situation.

They were constantly cold, crowded, and subjected to the same poor food stores of canned meats and vegetables

All spoke different languages so communication was hampered, morale low

Another person, a young officer, died over the winter of a weak heart and was lowered into the sea in a hole in the ice

Cook convinced them to eat seal and penguin meat to prevent scurvy and helped keep up morale during the long winter night



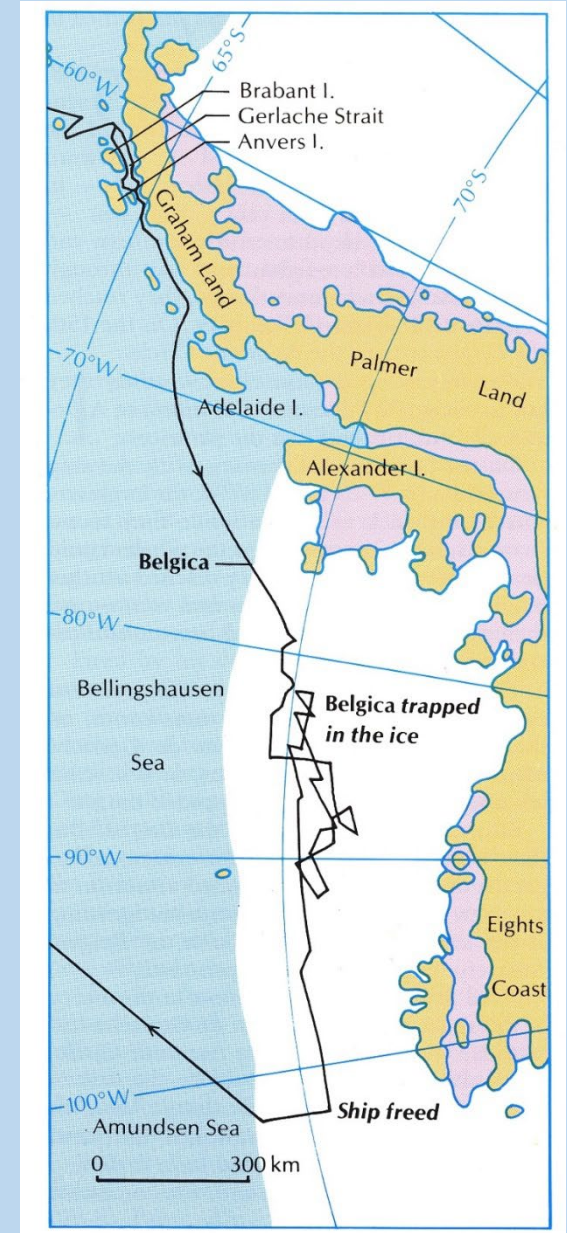
In the Polar Camp
at the end of the winter night

By the following spring, spirits rose with the sun coming back, but they were still stuck in thick sea ice

As a second summer began to end, their spirits dropped in the possibility of having to spend another winter in the ice

In December 1898, they sighted open sea and tired to cut a channel in the ice, but just as they almost had it open the winds shifted and closed the channel

In mid February, though, the ice shifted again and they were able to break free by mid March and head home



All agreed that Frederick Cook was the one who saved them all, kept them together and sane

Amundsen also was the perfect sailor, a good link between officers and crew



These expeditions by Gerlache and Bull set the stage for the Heroic Age

Borchgrevink also gave a lecture in London in 1895 and added to the call for more Antarctic research that Sir James Murray had promoted in 1893

The 1897 voyage by Gerlache is considered to be the inauguration of the Heroic Age

It was the time when some of the most famous Antarctic explorers of the future received their initiation into the Antarctic and led to many other voyages of discovery

These expeditions gave impetus for further work and Borchgrevink prepared himself to do this

A British publisher supported him to take 12 men to locate the south magnetic pole in 1898

Known as the *Southern Cross* expedition from the name of his ship

Angered scientific societies in Britain as they were planning to support their own expedition, so Borchgrevink sailed with a mostly Norwegian crew of 12 under a British flag

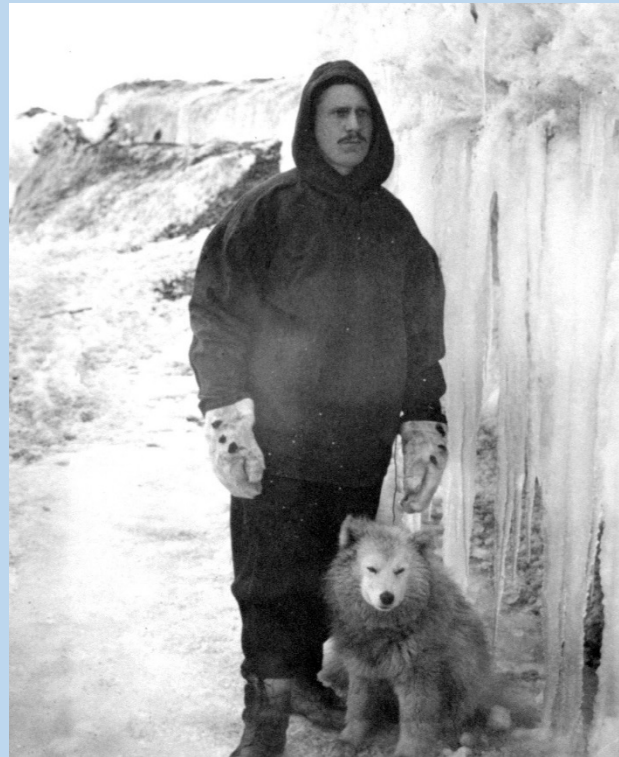


Although the expedition sailed under a British flag and, at the insistence of Sir George Newnes, was called the British Antarctic Expedition, only five of the entire complement were not Norwegians.

**Included a Norwegian zoologist, Nicolai Hanson
Australian physicist, Louis Bernacchi**

**Also two Finns with 75 dogs and sleds, the first use of
dogs in the Antarctic**

**Their primary objective was scientific studies, surveys,
and trying to locate the south magnetic pole**



They built two prefab huts at Cape Adare, one of which still stands today

Their winter over was fraught with difficulties, disagreements and accusations of incompetence and self aggrandizement aimed at Borchgrevink, especially by Bernacchi as indicated by his journal

Still, over the winter and with the dog teams, they explored the area as much as possible, but Cape Adare is too isolated to reach areas farther south.

When ship returned the following summer, they explored the Ross Sea and took sleds onto the Ross Ice shelf for the first time, traveled as far as 78° 50' S, the farthest south anyone had ever gone







2005



Over the winter, Hanson, the zoologist died of an unknown illness, perhaps related to vitamin deficiencies or intestinal disorder

His grave was placed on the terrace above the beach, near a large boulder where he liked to sit and watch for penguins returning to the colony



Shortly after Borchgrevink's return, he received little credit or recognition for the accomplishments of the expedition

He did show, especially to Amundsen, that travel across the Ross Ice Shelf was feasible

After this expedition, Borchgrevink did little other exploration and settled back in Norway

Years later, he received more recognition from Roald Amundsen in 1912 and finally the Royal Geographical Society recognized his accomplishments and awarded him their Patron's Medal in 1930

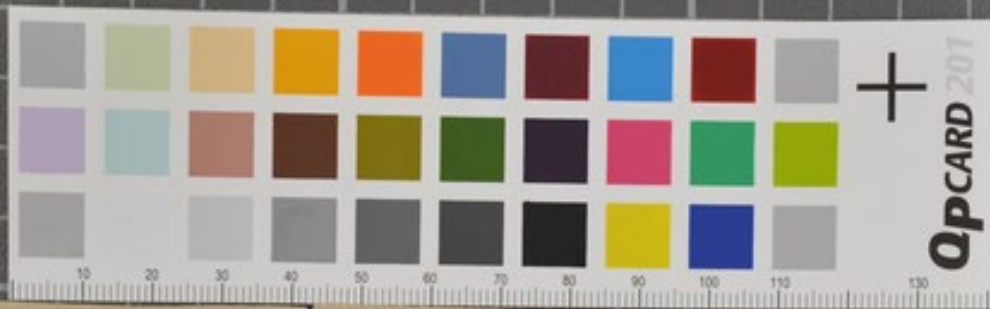
Recent documentary on Borchgrevink produced in Norway and at Cape Adare



Oslo, Norway, Botanical Museum



Type specimens of a new species of lichen, *Usnea antarctica*



Usnea antarctica sp.
Type Collection

O-L-1020

Peninsulars from Gjetland
2000 ft. Admiralty range
C.S.B.



O-L-1020

Usnea sulphurea (Koen.) Th. Fr.
f. *aphacelata* (R.Br.)

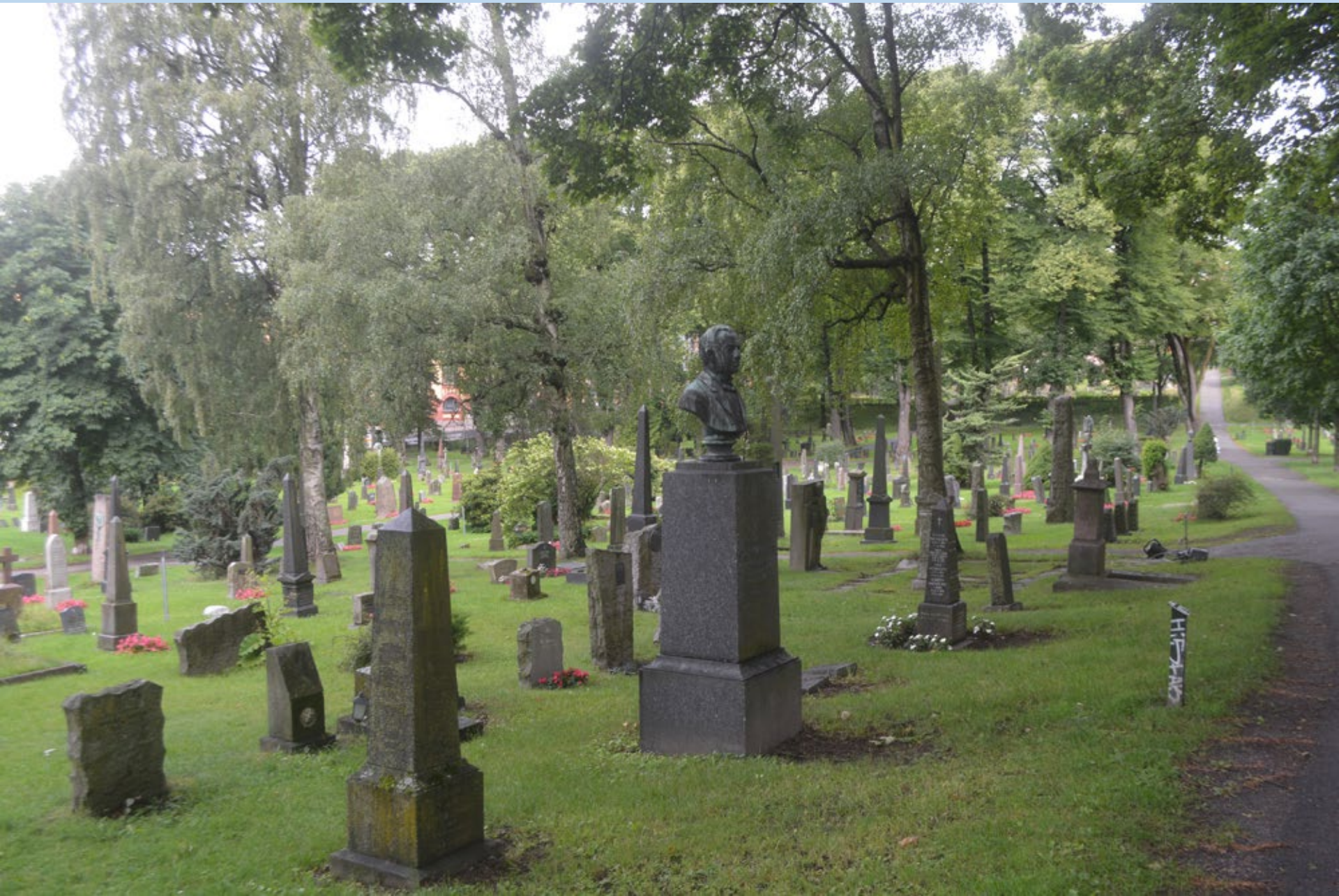


Usnea sulphurea (Koen.) Th. Fr.
f. *aphacelata* (R.Br.)
Gjetland 300'

O-L-1020

Oslo, Norway

Var Frelzers cemetery



Two other expeditions were soon underway, one in the AP and one in the Ross Sea:

1901 Swedish Expedition to the AP led by Otto Nordenskjöld
1901 British *Discovery* Expedition led by Robert Falcon Scott



The Swedish expedition was to drop Nordenskjöld and five men at a winter campsite on Snow Hill Island in the Weddell Sea via the ship, the *Antarctic*, with Capt. Carl Anton Larsen

After dropping the men in Feb. 1902, Larsen was to return to pick them up the following summer



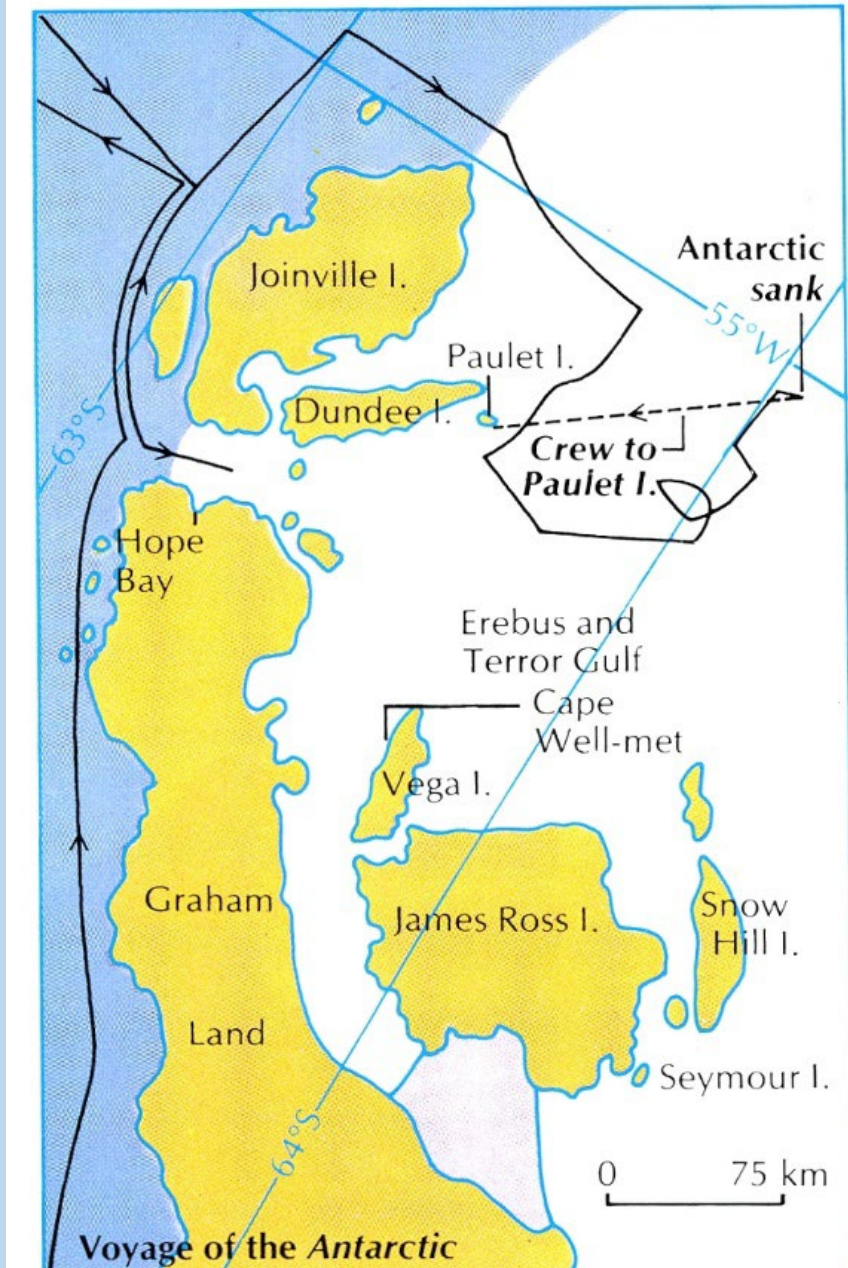
The men on Snow Hill set up a weather and magnetic station and survived many storms through the winter

In spring, took sled dogs and journeyed over the sea ice, explored the coastline, and went to Seymour Island where Nordenskjold discovered the first giant penguin fossils there, and collected first bacteria from the atmosphere by the hut.

Also, by December 1902, there was heavy sea ice and no way for the ship to reach them and pick them up and in mid February 1903 a storm and drop in temperature froze the sea and no pickup was now possible

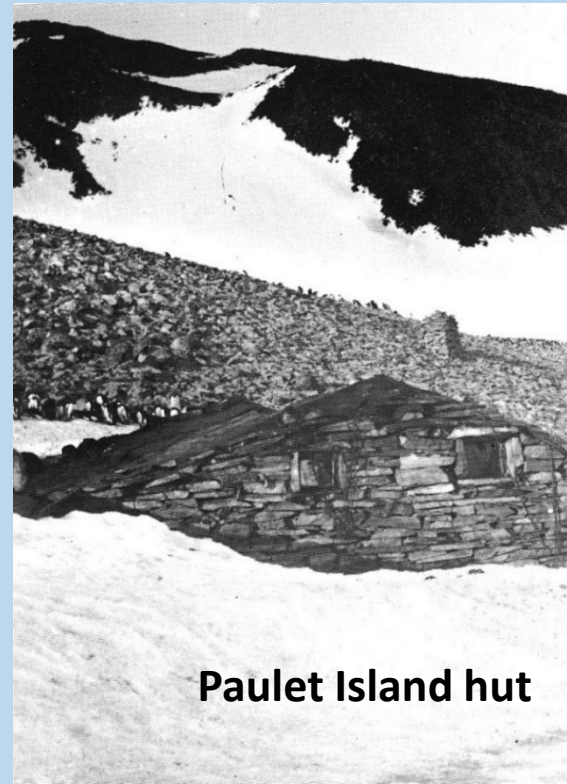
Had to spend another winter and the next spring they set off again explore the area, but met three soot-covered men on the ice





Their ship, the *Antarctic*, had been caught in ice when it arrived that summer (Dec 1902) to pick them up and it was crushed and sank 25 miles from Paulet Island, after leaving three at Hope Bay.

The 20 men on board were forced to winter over on Paulet Island in a stone hut they built, and three others that had been dropped at Hope Bay



Paulet Island hut

Larsen's stone hut, Paulet Island



The three men left at Hope Bay were to establish a depot and then walk to Snow Hill Island to find Nordenskjold in January 1903, but ran into open water and had to turn back, wait for the ship to pick them up.

They didn't know that the ship would not be coming back, so as the summer was ending they realized they needed to build a hut at Hope Bay and prepare to stay for the winter.

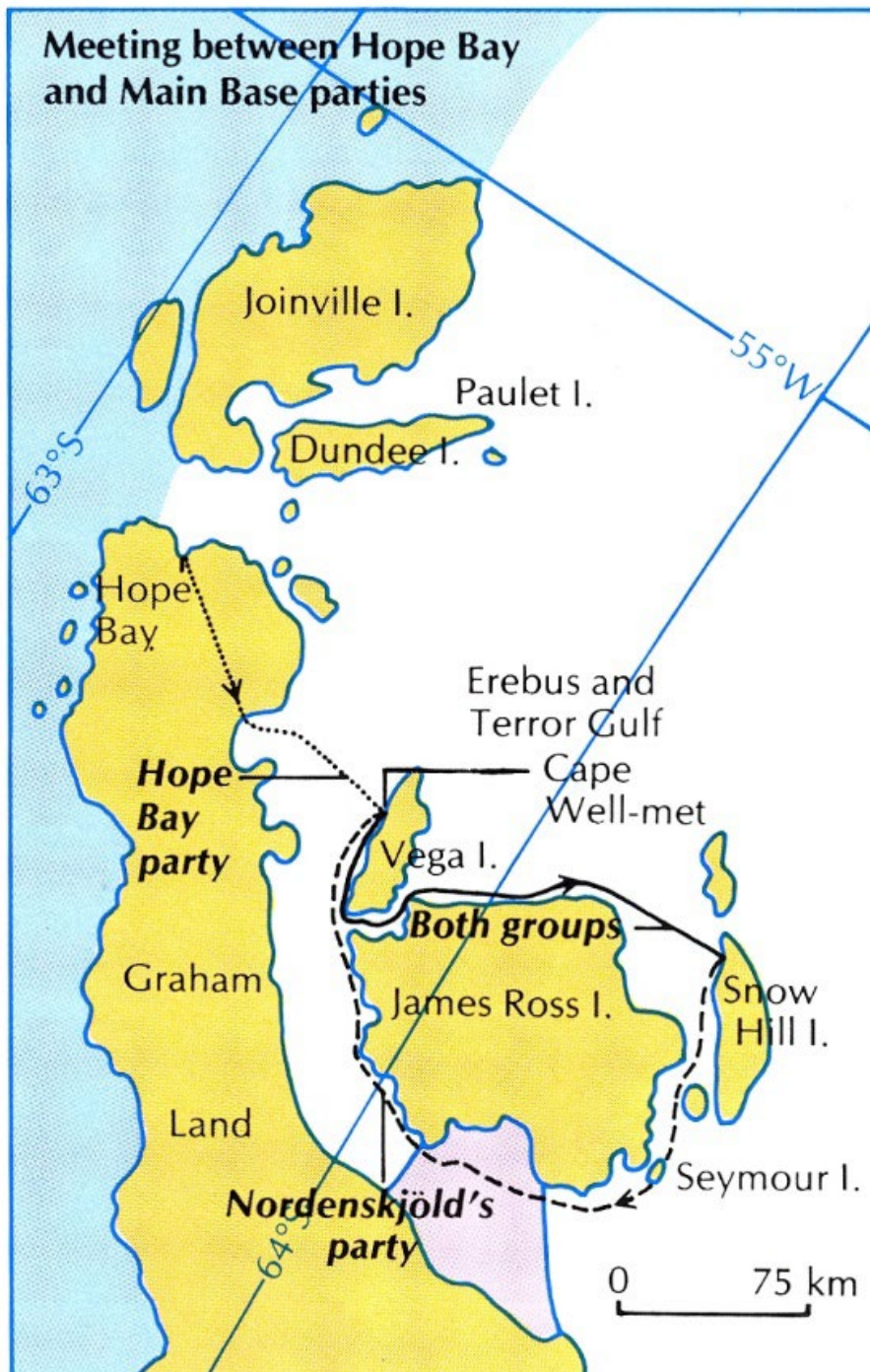
The following spring they set out again for Snow Hill Island in late Sept



Hope Bay hut

Stone hut at Hope Bay





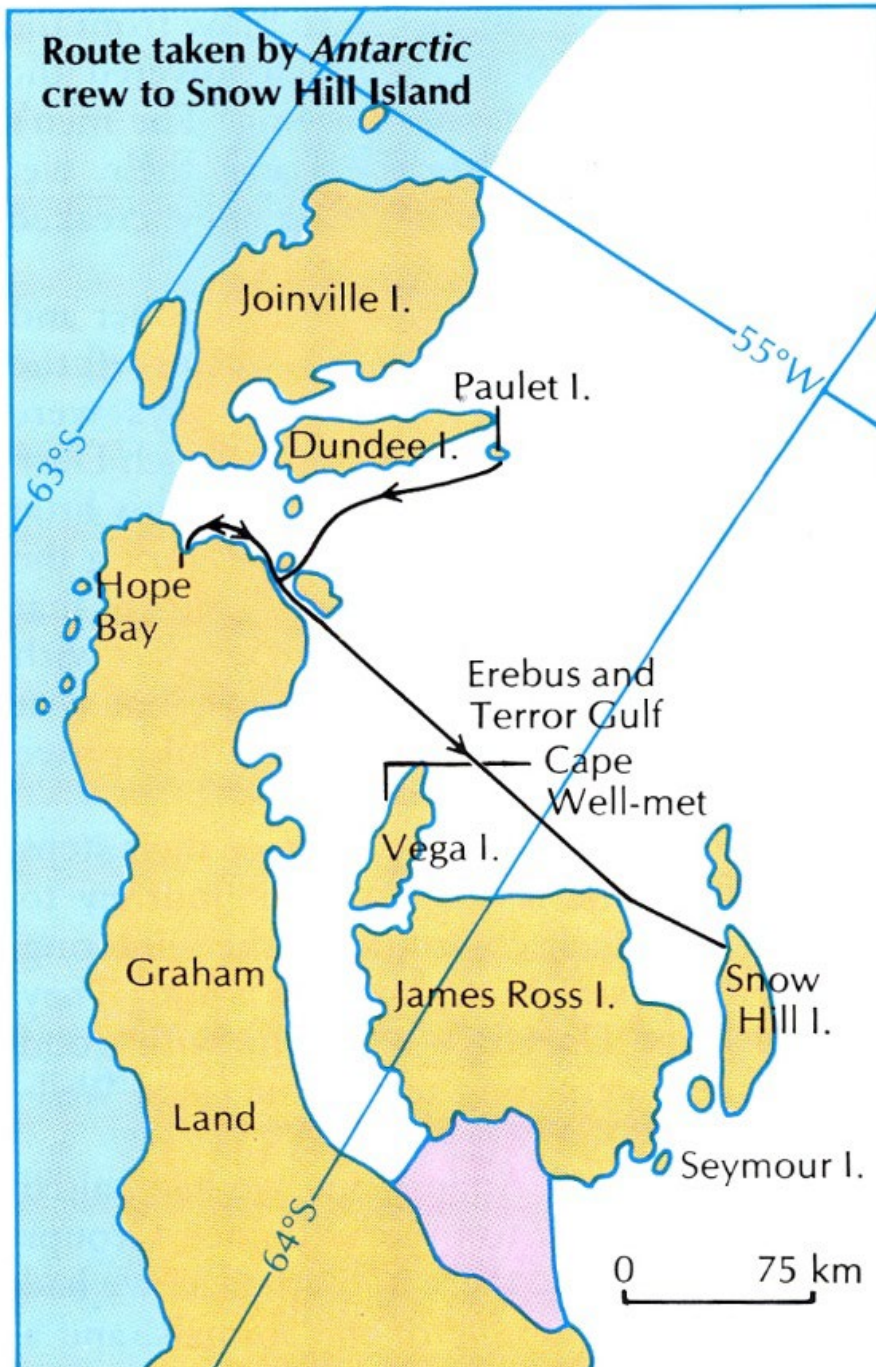
The three men who had left Hope Bay were nearing Vega Island when they saw men approaching them—it was Nordenskjöld and one other from Snow Hill Island out exploring

The reunion spot is now called Cape Well-met and both groups went back to Snow Hill Island



The three men from Hope Bay at the hut on Snow Hill Island

Route taken by *Antarctic* crew to Snow Hill Island



After a hard winter on Paulet, including the death of one man, Captain Larsen took five men and set out in the boat for Hope Bay in October 1903

Reached the hut at Hope Bay by 4 Nov and found a note that the three men were again trying to reach Snow Hill Island (their second attempt to go there)

Meanwhile an Argentine rescue ship, the *Uruguay*, was making its way south to find the missing ship and men

Larsen and his men set out for Snow Hill Island in the boat on 7 November

On the same day, two other men from Snow Hill walked to Seymour and built a cairn and left a boat hook with their names in case anyone was sailing by and could see it



Also on 7 Nov an officer from the *Uruguay* landed on Seymour and his men found the cairn. Searching further they found the two men sleeping in a tent and took them to Snow Hill Island and met Nordenskjold there



Argentine plaques at site where they met the two men from Snow Hill Island

Even more coincidental, Larsen arrived at Snow Hill that evening

Now all groups had met and need only pick up the men still left on Paulet Island to complete the rescue



The rescue ship, the *Uruguay*, is now a floating museum in the harbor in Buenos Aires, Argentina







Fig. 2. Martha Löwenhielm shares recollections of her father, the polar explorer Otto Nordenskjöld, with the participants in the conference “Antarctic Challenges” in May 2001 at the tavern of the Terra Nova Shipyard, Göteborg. Photo: Urban Wråkberg

Also in 1899-1900, England was planning their own scientific expedition and irked about Borchgrevink's independent plans

The Royal Geographical Society and the government planned to support an expedition to the Ross Sea led by naval officers

A young lieutenant, Robert Falcon Scott, was chosen to command the expedition and a ship, the *Discovery*, was built specifically for scientific research

Another officer included was a sub-lieutenant, Ernest Shackleton

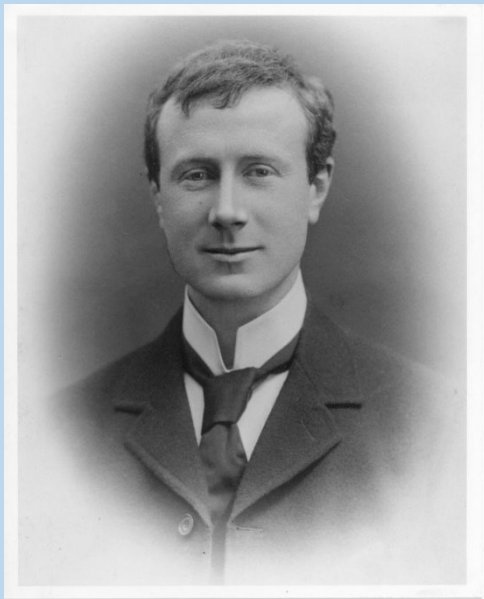


The ship with officers and a crew of 20 left for the south in August 1901.

Besides exploration, the purpose of the expedition was research on magnetism, meteorology, oceanography, geology, and biology

The zoologist was Dr. Edward 'Bill' Wilson and in New Zealand they added the physicist, Louis Bernacchi, who had been with Borchgrevink at Cape Adare

They sailed south and reached Cape Adare on 8 January 1902, then moved on into the Ross Sea where they set up winter quarters on Ross Island





Before setting up the hut, they landed a party on the ice shelf. Some of the men were sent off on a sledging party to go farther south, beat Borchgrevink's record by 29 km

Scott also brought a balloon supplied by the army and inflated it to test its application in the Antarctic. Was not free-floating, but held by a wire and Scott could see the sledging party in the distance.



Three huts were built at Hut Point, two to hold scientific instruments, and one was the main living quarters

However, the main hut proved too cold and airy, with ice leaking in, so they all stayed on the ship as their winter quarters

Kept busy with research, games, and even produced a paper with humorous stories call the *South Polar Times*

They had brought sleds and dogs too, but no expert on keeping dogs or using dog sleds.

One major aim of the expedition was to reach the South Pole, so they began preparations for a sledging trip during the winter as well



Another fatality occurred on an expedition sent to Cape Crozier, led by Lt. Barne who had no experience on ice or snow conditions

First to discover the Emperor penguin colony there

On return journey, in a blizzard George Vince slipped and fell down an icy slope into the sea (he had flat soled boots on), body never recovered





Memorial cross for George Vince erected near the hut at Hut Point

After this, the expedition spent the winter preparing for the work ahead in the following summer

**Shackleton, Scott and Wilson right before
leaving for the South Pole, 2 Nov. 1902**



The South Pole party met with many difficulties, with the sleds, dogs, food, and scurvy

Goal was to reach 85° S, but eventually turned back at 82° 16' S

Shackleton was in worse shape from scurvy plus they had to kill all dogs and man-haul the sleds





At end of journey, 3 February 1903

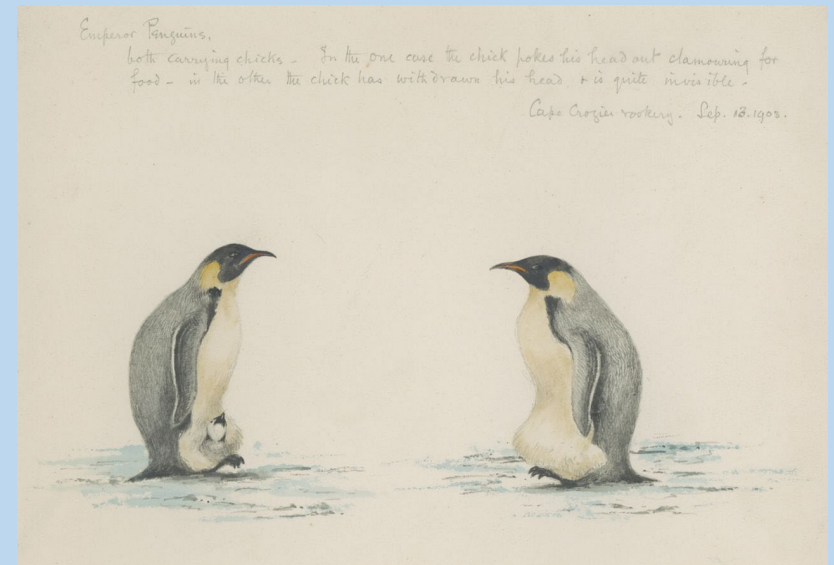
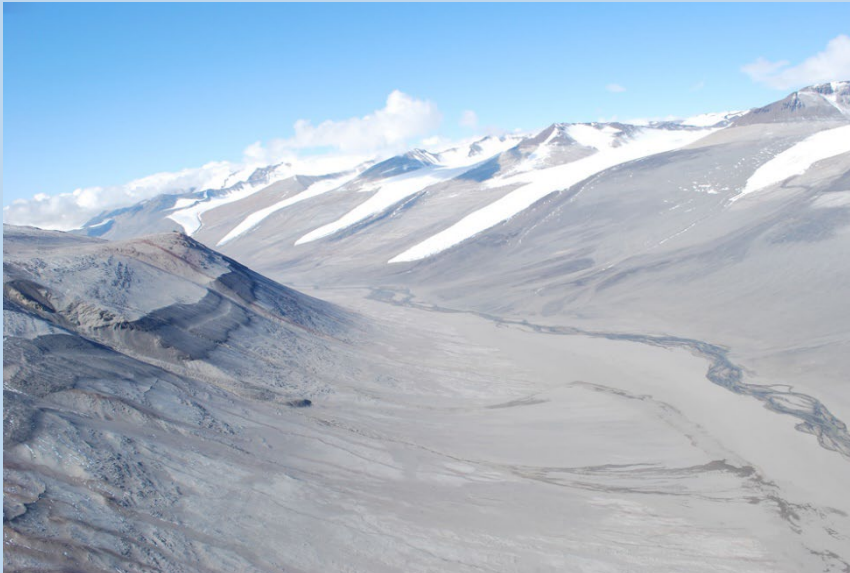
A relief ship arrived and he sent several men home, including Shackleton

The expedition spent one more winter and explored more of the area the next summer.

Scott led a party without dogs to the polar ice cap to the west and discovered the Dry Valleys and the polar plateau, first to travel on it

Bill Wilson discovered that fresh seal meat would prevent scurvy

Thousands of geological and biological specimens collected, including new marine species, plus lots of meteorological data



**Two relief ships arrived in January 1904, but extensive sea ice in
McMurdo Sound kept the *Discovery* locked in with another winter
looming**

**Scott was ordered to abandon the *Discovery* and leave with the ships if
the ice didn't clear**

Finally, the ice opened and they were able to leave in mid February 1904



Besides the science, this expedition was important for many other reasons:

They learned how to work in the cold and that objects on the horizon always looked closer than they were, not to march in blizzards

They failed at using dog teams to help move men and gear

They learned that accidents can happen quickly and suddenly with sometimes fatal consequences

They learned that reaching the pole will take herculean efforts

It began a rivalry between Scott and Shackleton, especially when Scott later wrote that they failed to reach the pole because of Shackleton's illness

The main hut at Hut Point is still there and protected as an historic site by the New Zealand Heritage Trust



DISCOVERY HUT, HUT POINT
THIS HUT IS A HISTORIC MONUMENT AND
WAS DESIGNED BY ROBERTSON AND
CONSTRUCTED BY THE NEW ZEALAND
NAVY IN 1841. IT WAS THE FIRST
ANTARCTIC BUILDING OF ITS KIND
LED BY CAPTAIN JAMES COOK
WHO BUILT THE HUT IN FEBRUARY
1805.

ANTARCTIC DISCOVERY HUT POINT
Questa è un monumento storico
che fu progettato da Robertson e
costruito dalla Marina Nuova Zelanda
nel 1841. Fu il primo edificio
antartico di questo tipo
costruito dal capitano James Cook
che costruì l'edificio in febbraio
1805.

ANTARCTIC DISCOVERY HUT POINT
Este edificio es un monumento
histórico que fue diseñado por
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1841. Fue el primer edificio
antártico de este tipo
construido por el capitán James Cook
quien construyó el edificio en
febrero de 1805.

Quiz

1. What is meant by the 'heroic age' in Antarctic history and what two events in the 1890s led to its beginning. What was significant about Gerlache's *Belgica* expedition?
2. What was significant about the *Southern Cross* expedition and the contributions of Carsten Borchgrevink?
3. What were some major findings and contributions by the 1901 Swedish expedition led by Otto Nordenskjold?
4. What was significant about the 1901-1904 *Discovery* expedition? Give several advancements in Antarctic science that resulted from this expedition.
5. How did the rivalry between Robert Falcon Scott and Ernest Shackleton begin during this expedition?