

## The 1869/70 German North Polar Expedition

In 1866 the German geographer and cartographer August Petermann, enterpriser and promoter of several expeditions, to polar regions and to Africa among others, in a so-called "Proclamation to the German Nation" demanded German participation in the exploration of the north polar region (Petermann, 1866). Besides the scientific motivation, Germany wanted to fly the flag on the oceans and overseas in order to establish itself as a great power.

In the summer of 1868 the first German North Polar Expedition took place under the command of Karl Koldewey and with the ship *Grönland*, which was bought in Norway. This expedition did not lead to much new scientific knowledge and explored only a few unknown coastal areas in northeast Spitsbergen. Nevertheless navigation experience for sailing in the ice was gained and this provided the basis for a second, more extensive expedition (Venzke, 1988).

Emperor Wilhelm I was present on 15 June 1869 when the exploration vessels *Germania* and *Hansa*, under the command of Captain Koldewey, left Bremerhaven in northern Germany. The *Germania*, finished in April, was specially constructed for the arctic expedition. She was a schooner of 30 m length and 600 tons, with extra strong planks and an auxiliary engine for sailing in the ice. The *Hansa*, a convoy for the *Germania*, was a smaller schooner without an auxiliary engine. Built in 1864, the *Hansa* had been bought and fortified by the Bremische Comité für die zweite Deutsche Nordpolarfahrt (Committee of Bremen for the Second German Voyage to North Polar Regions).

The crew of the *Germania* consisted of 15 men, including Captain Koldewey and the medical doctor Georg Pansch; the crew of the *Hansa* consisted of 13 men, including Captain Paul Friedrich August Hegemann and the medical doctor Reinhold Wilhelm Buchholz. Scientific personnel on board *Germania* were Dr. Karl N.J. Börgen and Dr. R. Copeland, astronomers and geophysicists at the University of Göttingen, as well as First Lieutenant Julius Payer, from the Austria-Hungary Empire Army, a cartographer of high mountain areas. Dr. Gustav Laube, a geologist from the University of Vienna, was on board the *Hansa*. The medical doctors themselves were experts in zoology, botany, ethnology and anthropology.

The order for this Second German North Polar Expedition was written down in the "Instruction" by August Petermann. The aims were to explore the nature of the North Pole region, if possible up to the region of the Bering Sea, and along the northeastern coast of Greenland. All this was to occur from a wintering station in the unexplored northeast of Greenland (Verein für die Deutsche Nordpolarfahrt in Bremen, 1873/74).

One month after leaving the harbour the Germans found pack ice at approximately 75.5°N. On 20 July, the ships became separated from each other due to the misunderstanding of a signal. For the rest of July, the *Germania* tried to find a way through the pack ice, but the handling of the *Hansa* without an auxiliary engine was proving more and more difficult. On 14 September, the *Hansa* was completely

blockaded by pack ice and was slowly crushed. On 22 October 1869, the ship finally sank at a position of 70° 32' N, 21° W, approximately 10 km away from the east Greenland coast. The further destiny of the crew of 14 men on board the *Hansa* was an adventurous tale in the history of polar expedition. Before the *Hansa* sank the men had brought provisions and dinghies onto the ice, where they built a hut of coal dust briquettes in which they lived for the whole winter, while drifting southward along the coast of eastern Greenland. Finally in early June 1870 the crew reached the coast by boat, and on 13 June they arrived at the Herrnhut mission of Friedrichsthal. On 3 September they reached their native country at Schleswig with Danish aid.

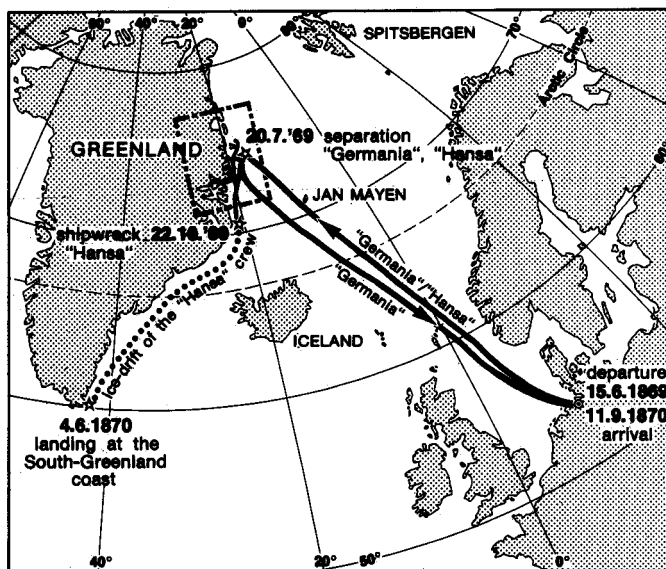


FIG. 1. Courses of the German research vessels *Germania* and *Hansa* in the 1869/70 expedition.

The main ship of the expedition, *Germania*, broke through the belt of pack ice during the summer of 1869 and, for the first time, anchored on the east coast of Greenland, offshore of Sabine Island. Until mid-September reconnaissance trips were made to the regions of the Pendulum Islands, Shannon and Sabine Island. On 13 September, the *Germania* was anchored in a winter harbour on the south coast of Sabine Island. While Dr. Pansch supervised the preparations for wintering, such as unrigging and insulating the ship, Captain Koldewey and Lieutenant Payer ventured on the first sledge expedition from 14 to 22 September to the Pendulum Islands, where they discovered, among other things, lignite seams.

A second sledge expedition to the north of Clavering Island from 27 October to 4 November provided new knowledge on the glaciology, glacial geomorphology and geology of east Greenland.

During the winter two observatories were installed along the coast for geomagnetical and astronomical observations and measurements. From mid-October meteorological recordings were done every hour. During the late winter and spring of 1870, zoological-ethological observations of musk-ox, snow-

grouse, arctic fox, caribou, walrus and other animals were made.

At the end of the winter, after initial difficulties, Lieutenant Payer undertook another sledge trip to the north and, after several stops caused by storms, reached the most northerly

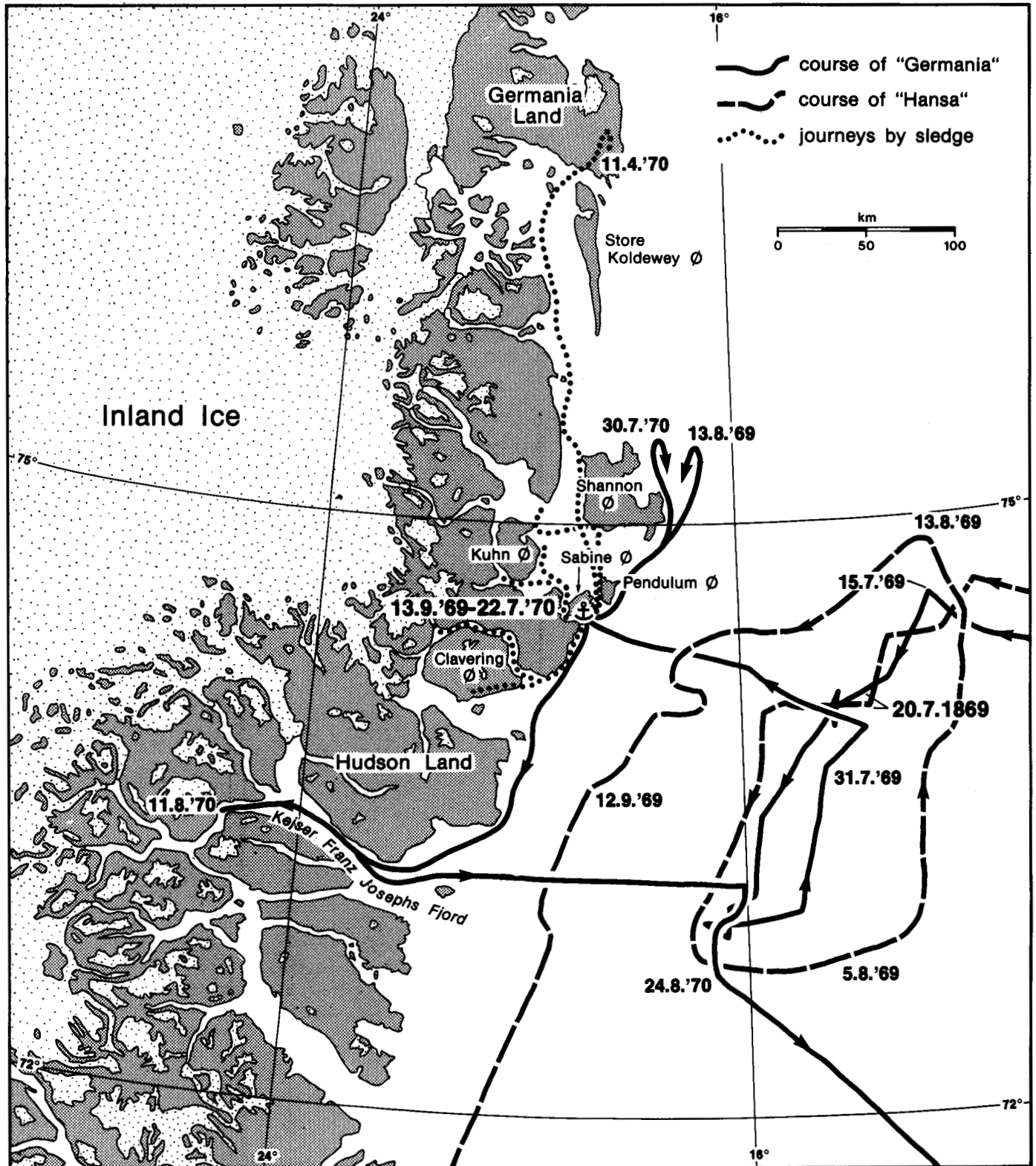


FIG. 2. Detailed map of northern East Greenland with the courses of *Germania* and *Hansa* as well as the sledge journeys and the wintering harbour on the south coast of Sabine Island. The topographic names are the official Danish ones (Ø = island). (Mainly taken from Grümmer, 1989.)

point of the expedition at 77°01'N on 11 April 1870. This position is situated on Germania Land, a peninsula north of the Koldewey Islands, both named after the German expedition.

Further trips by sledge completed the exploration of the northeastern coast of Greenland. In May, Lieutenant Payer travelled to the Ardencaple Inlet, where he made an extensive geological collection; in June, Copeland and Børgen travelled to take astronomical measurements and Dr. Pansch undertook an archaeological exploring expedition to Sabine and Clavering islands.

On 10 July the ice in the winter harbour began to break, and on 22 July the *Germania* set course for the north, only to find the way closed by the pack ice, as in the preceding year. Eight days later the crew decided to return south. As they travelled south along the east coast of Greenland, they visited many of the fjords, especially the Kaiser Franz Josef Fjord in early August, where cartographic surveys were carried out and geological, botanical and zoological collections were gathered.

The voyage home began on 16 August, and eight days later the pack ice belt was passed. After several technical difficulties the engine broke down, and the rest of the voyage had to be under sail. The *Germania* reached Bremerhaven on 11 September 1870 — 453 days after her departure.

This Second German North Polar Expedition of 1869/70 resulted in several geographical discoveries in northeast Greenland and the cartographic survey of the region. In addition, geological, glaciological, glacial geomorphological, zoological, botanical and archaeological studies were conducted. Extensive astronomical, geophysical (especially

geomagnetic), meteorological and hydrological measurements were carried out. The scientific results of the expedition were published in a volume of nearly 1000 pages (*Verein für die Deutsche Nordpolarfahrt in Bremen, 1874; Koldewey et al., 1871*). The exact astronomical locations of Børgen and Copeland were an important factor in the development of Alfred Wegener's (1915) theory of continental drift!

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