

The 100th anniversary of the Fridtjof Nansen expedition to the North Pole

OCEANOLOGIA, No. 36 (2)
pp. 207–208, 1994.
PL ISSN 0078–3234

In 1882–1983 the I International Polar Year was organized, during which 12 stations from 12 countries were operated. Many projects for reaching the North Pole were conceived in the 1880s. Fridtjof Nansen's project was one of them: he wanted to carry out an investigation of the Arctic and to reach the North Pole.

The vessel 'Fram', used in his expedition, was 39 m long and 11 m wide at her broadest point. With a draught of 4.75 m and a displacement of 402 BRT, she could proceed under sail or be propelled by a 220 HP engine, and her sides were strengthened by the use of special frames and double plating.

With 12 persons on board, the 'Fram' was ready to leave on 24 June 1893. Having entered Tromsø on her way north, she left Norway on 27 July, heading east. Nansen wrote in his diary: 'Strange feelings – to sail in the dark night through the unknown open sea, the waves of which haven't been broken by any ship'.

The ship entered the pack ice on 21 September 1893 and started to drift. The whole time meteorological observations were carried out, and the temperature of the water and air, and the salinity were measured. Moreover, observations of the birds and animals were made; plankton was collected; the magnetic intensity of the Earth's field, air ionization, sea depth and sea ice thickness were measured; samples of bottom sediments were taken.

In April 1894 the 'Fram' reached lat. 80°N. Nansen had hoped to reach the Pole during this expedition, but his observations showed that this would be impossible. The ship had only reached 83°47'N by March 1895; there were still 770 km to the Pole. So, Nansen and his shipmate lieutenant Hjalmar Johansen decided to walk. They started out on 28 February equipped with dog teams, food and research equipment, and by 8 April they reached the position of 86°13'N, 95°E, 450 km from the Pole. But exhausted and unable to continue the journey, they decided to return, heading towards Franz-Joseph Land, which they reached on 7 August after wandering for 107 days. They passed the winter on Jackson Island in that archipelago and set off southwards at the beginning of spring. On 17 June they met Frederick Jackson

from the English expedition, whose ship later took them back to Norway. They left Franz-Joseph Land on 7 August 1896, exactly one year after reaching it.

In the meantime, although the 'Fram', commanded by Otto N. Sverdrup, was still drifting, sea depths, salinities, and water temperatures were still being measured and bottom sediments sampled. The ice drift was observed. On 13 August 1896 the 'Fram' was released from the ice and sailed back to Norway. After 10 days she entered Tromsø, where Nansen and Johansen had arrived one week earlier.

Despite all the setbacks, it had been a successful expedition and started the modern exploration of polar seas; many unsolved problems could now be explained. Further expeditions to the Arctic and the Antarctic were subsequently organized. From 1898 to 1902 the 'Fram', commanded by Sverdrup, took part in an expedition to the Canadian Arctic Archipelago and then in Amundsen's expedition to the South Pole (1910–1913).

Norwegian and Scandinavian oceanography developed quickly after Nansen's expedition. Investigating ice drift, Eckman and Sverdrup noticed that its direction differed from that of the wind. These observations enabled Eckman to create the current spiral and his theory of drift flows. In addition, Helland-Hansen observed the influence of seawater density on drift components at various depths. The law that he formulated from his observations was implemented in marine current investigations in the North Atlantic in 1925.

Nansen and his co-workers had started the development of 20th century oceanology.

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