

FRIDTJOF NANSEN

(ON THE 150TH ANNIVERSARY OF HIS BIRTH)

In 2011, two great events, important to the entire educated world, have coincided. These are the 150th birthday anniversary of Fridtjof Nansen (10/10/1861) and the 100th anniversary of Roald Amundsen's expedition reaching the South Pole (14/12/1911). On January 23, 2011 in Tromsø, Norway, the celebration of the Jubilee Year in honor of the two national heroes – polar explorers has been launched. The main celebration was on October 10. Norwegian Foreign Minister Jonas Gahr Store said that the north of the planet is the priority of Norwegian foreign policy, that it is necessary to protect the Arctic nature, and that the extreme north is, in a sense, the territory common to Russia and Norway. Northern unity of the two countries in the early twentieth century has been turned into a reality by the great Fridtjof Nansen (Fig. 1).

Fridtjof Nansen was born in the town near Kristiania to the family of a lawyer. At the age of 23, he graduated in zoology from



Fridtjof Nansen

Fig.1. Nansen at 32 years of age

the University of Kristiania. In 1886, he was awarded the Big Gold Medal of the Royal Academy of Sciences for research in animal parasitology. In 1888, Nansen was awarded a doctoral degree. In 1897, he accepted a professorial position. Prior to that, there were carefully planned expeditions to Greenland and on the "Fram" that received worldwide recognition. In 1906–1908, he was Ambassador of Norway in the UK. In 1913, he took a trip to Siberia and the Far East. At the end of World War I, he became the representative of Norway to the United States and, in 1920–1922, he was the League of Nations' High Commissioner for Refugees. He issued special Nansen passports, saving lives of many people. In 1921, on behalf of the International Red Cross, he set up a committee "Nansen Aid" to save the starving Volga region and arranged to send there 4000 trains with food supplies. Nansen was one of the few international-standard politicians who were loyal to the young Bolshevik Russia and the USSR. In 1922, he was awarded the Nobel Peace Prize. Of these funds, Nansen paid for equipment for several Machine and Tractor Stations in the RSFSR.

The Greenland expedition. On July 17, 1888, the ship "Jason" approached the east coast of Greenland, near Angmassalik, by 180–20 km and landed the expedition of six men led by Nansen on the floating ice fields. The ice drifted south through storms. Progression on two boats to the largest world's island through a big clearing between ice and icebergs came with a huge risk. On the twelfth day, they reached the shore where they met Eskimos. Nansen has described their life and social order. Upon reaching the fjord Umivik, on August 23, they began sled-ski ascent of the ice sheet. Frost reached -40°C . On September 5, they came to a glacier pass at an altitude of 2720 m; on September 24, they were on its western edge and arrived in Godthab on October 12 where



Fig. 2. "Fram" in the ice-prison

they spent the winter. The steamer "Vidbern" brought them to Kristiania (the former name of Oslo) on May 30, 1889. Six heroes were honored by the entire nation. Information was obtained about the weather and the shape and the height of the glacier in the southern part. The London Geographical Society awarded Nansen Victoria Medal of Honor; the Paris Academy of Sciences elected him a corresponding member¹.

Four years in the high Arctic. The idea of Nansen was to use the ice drift motion for a research vessel in the circumpolar ocean sector. The ship "Fram" was built to withstand the strong ice pressure by being pushed out of it. It was equipped with everything necessary for five-year duration. On June 24, 1893, "Fram" sailed from Kristiania. In Russia, they acquired sledge dogs. In September, "Fram" got into impassible ice in the Laptev Sea. Thus its drift in the ice-prison began. On January 5, 1895, "Fram" experienced terrible pressure, shocks, and blows to its careened down left side (Fig. 2). It was almost wave-covered. Thirteen members of the expedition were heroically rescuing their ship.

On March 14, 1895, Nansen and Johansen, using teams of dogs, were headed to the North Pole. During the expedition's traverse through the ice desert they came closer, than anyone else before, to the North Pole (86°13.6'N) and turned to the Franz Josef

Land where they stayed through the winter. In the spring, on lashed kayaks, they sailed along the islands. On June 12, 1896, Nansen, in the icy water, miraculously caught the wind-ripped catamaran made of two kayaks that carried all their life support. This was their salvation from death. Sailing continued. On June 17, on the Nordbruk Island, Nansen went in the direction of sounds of a dog barking and met F. Jackson, head of the British expedition (Fig. 3). The British, stationed at the Cape Flora's Russian hut, warmly received two Norwegians (Fig. 4). On August 13, 1896, Nansen and Johansen arrived at Vardo, in the north of Norway, on the British ship "Vindvard" (Fig. 5). On August 24, "Fram" came back to Norway. Nansen became a true national hero. The merits of all the members of the expedition were marked by the king and the government (Fig. 6).

The scientific results have been invaluable².

"...we have demonstrated that the sea in the immediate neighbourhood of the Pole, and in which, in my opinion, the Pole itself in all probability lies, is a deep basin, not a shallow one containing many expanses of land and islands, as people were formerly inclined to assume" (p. 631).

"The force which sets this ice in motion is certainly for the most part supplied by the winds..." (p. 634);

¹ Fridtjof Nansen "The First Crossing of Greenland". London, Longmans, Green, 1890.

² Fridtjof Nansen "Farthest North". V.2. London, Archibald Constable and Company, 1897



Fig. 3. The meeting of Jackson and Nansen

“The hydrographic observations made during the expedition furnished some surprising data. Thus, for instance, it was customary to look upon the polar basin as being filled with cold water, the temperature of which stood somewhere about -1.5°C . Consequently our observations showing that under the cold surface there was warmer water, sometimes at a temperature as high as $+1^{\circ}\text{C}$, were surprising. Again, this water was more briny than the water of the polar basin has been assumed to be. This warmer and more strongly saline water must clearly originate

from the warmer current of the Atlantic Ocean (the Gulf Stream), flowing in a north and north-easterly direction off Novaya Zemlya and along the west coast of Spitzbergen, and then diving under the colder, but lighter and less briny, water of the Polar Sea, and filling up the depths of the polar basin. As I have stated in the course of my narrative, this more briny water was, as a rule, warmest at a depth of from 200 to 250 fathoms, beyond which it would decrease in temperature, though not uniformly, as the depth increased. Near the bottom the temperature rose again, though only slightly” (p. 634–635).



Fig. 4. Nansen in the hut at Cape Flora, the Nordbruk Island

It has been established that a discovery of F. Nansen’s advection of warmer and salty waters of the Atlantic under the colder waters of the Arctic Ocean takes place nowadays. In the past, for example, in the period between 10.8 and 9.0 thousand calendar years ago, cyclic amplification of advection of Atlantic heat in the marine and continental Arctic has been the cause of repeated climate warming superior in scale to the modern one³.

By vast expanses of Siberia and the Far East. A prominent Siberian businessman V.V. Lid has repeatedly asked Nansen to determine whether there were annual passages through

³ Lavrushin Yu. A. High resolution stratigraphy of the important natural events during last 20Ka in the Atlantic arctic areas. In: Nature of the shelf and archipelagos of the European Arctic. Issue 8, Moscow: GEOS, 2008, 432 p.

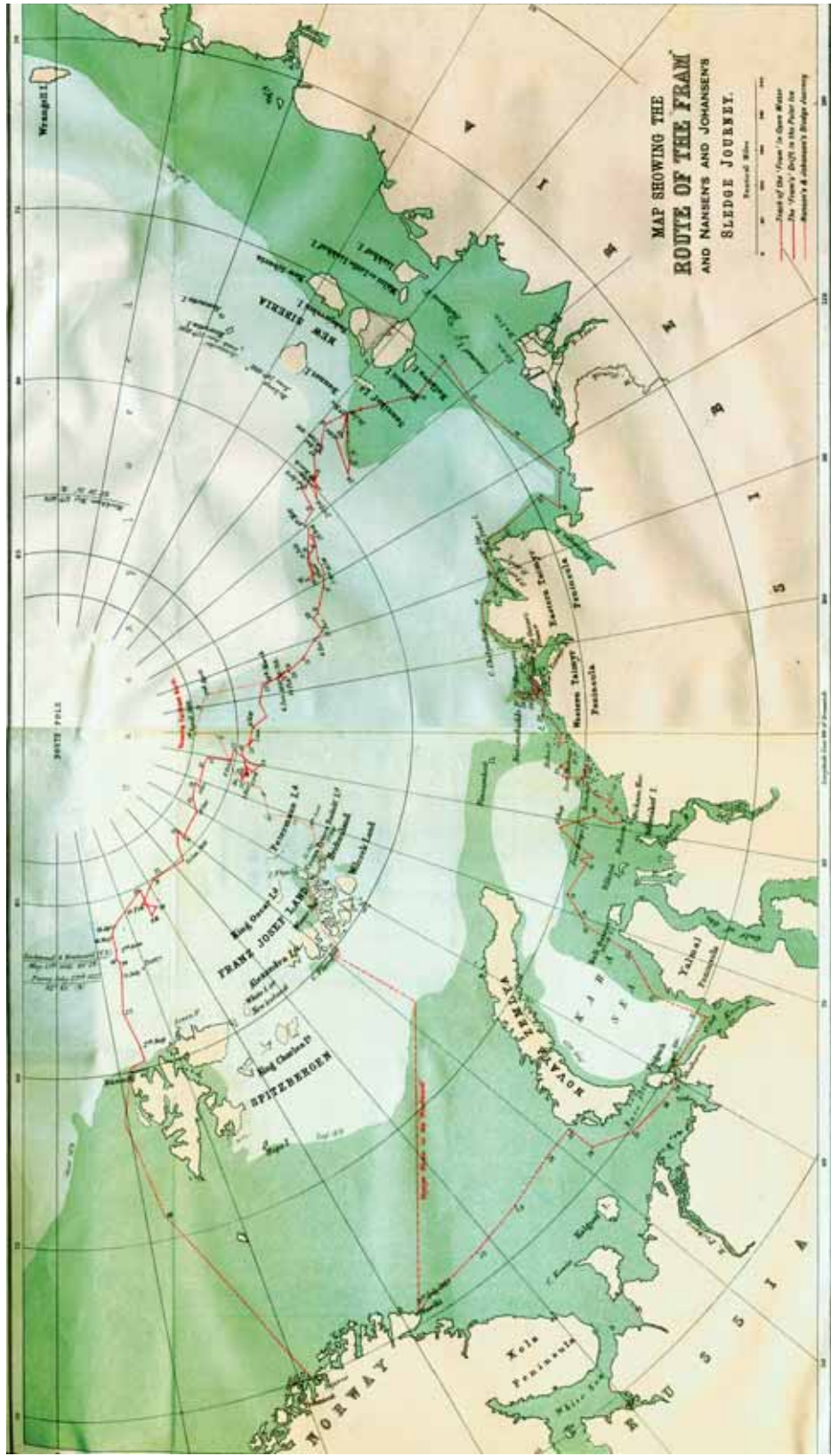


Fig. 5 The map of routes of the “Fram” and Nansen’s and Johansen’s



Fig. 6. Members of the expedition on the “Fram” (F. Nansen is second sitting from the right)

the Kara Sea to Europe. Managing director of the state-owned Siberian railways E.D. Vurtsel invited Nansen to travel along the Yenisei River to see the newly built eastern part of the Trans-Siberian Railway. Minister of Transport decided to treat Nansen as the guest of Russia. On August 5 to October 27, 1913, Nansen and his companions (Fig. 7) went from Tromsø by sea aboard the “Correct” to the mouth of the Yenisei River; then Nansen, Vostrovin, and Loris-Melikov sailed up the river to Yeniseisk by “Omul” that looked more like a boat than the steamer. On the way, the scientist was studying life, farming, resettlement, and social characteristics of the indigenous peoples of the Russian North. In the Kara Sea, he studied ice conditions and because of his knowledge and intuition, “Correct” made it into the mouth of the Yenisei River. While traveling on the river in the valley, Nansen recorded geology, geomorphologic features, presence of permafrost, change and types of vegetation, wildlife and fish resources, river systems, land use, forest management, reindeer herding, animal husbandry, crop production, transport networks, settlement, problems of development of Siberia by settlers, and even Chinese issues.

From Yeniseisk they traveled on chaise to Krasnoyarsk and then, the three, together with Vurtsel, went by the Trans-Siberian Railway to Baikal. Next, Nansen and Vurtsel went from the station Karymskaya (90 km pass Chita) by Chinese Eastern Railway to

Vladivostok. They traveled back along the Trans-Siberian Railway: in some places by train, by car, on the chaise, and on the boat. From Chita to St Petersburg – by rail.

Poorly developed Asian Russia, for Nansen as a whole – Siberia, the country of the future. We can read excerpts from his book since the beginning of their trip on the Yenisei River⁴.

“What a huge, broad mass of water flows out into the Arctic Ocean here; it makes a powerful impression. It gives one the feeling of being at the entrance to one of the great water-arteries of the world” (p. 70).

“It is curious to think of the long journey that has been made by much of the water that runs out here; all the way from the mountains of Mongolia. The Yenisei, with the Angara and Selenga, is reckoned as the fifth longest river in the world, about 3000 miles long” (p. 70). “It was a fine night. When I came on deck, about midnight, the sunset glow lay deep red, like a slow, smoldering fire, over the surface of the river on the north, with dark shreds of smoke-like cloud in front of it. Venus shone just above, and over Venus and sunset gleamed an arch of northern lights. It was an extraordinarily beautiful sight. High up the sky was deep blue and starry, beside us the surface of the water reflected the

⁴ Fridtjof Nansen “Through Siberia. The Land of the Future”. London, William Heinemann, 1914.



Fig. 7. Aboard the “Correct” from Tromsø to the mouth of the Yenisei River. Left to right: Captain J. Samuelson, entrepreneurs V.V Lid and V.V. Vostrotin, secretary of the Russian Embassy in Norway I.I. Loris-Melikov, Prof. F. Nansen

sky, and beyond it lay the low bank and the endless tundra” (p. 134).

“It was curious to see the different types of Russians in this country. Many of them bore a great resemblance to Scandinavians; there was in particular a fair, mild-mannered boy of eighteen here; if one had not known, one would have taken him for a Norwegian peasant boy. Many of these Russians were fair, with blue eyes and tawny hair, often curly. Tall, powerful fellows many of them were too. One might almost be tempted to think there had been some connection with Scandinavia here” (p. 143–144).

“There was a nice-looking Russian boy with such a pleasant smile and such splendid teeth that I could not take my eyes off him” (p. 151).

“I have come to love it, this boundless land, mighty as the ocean itself, with its infinite plains and its mountains – its frozen Arctic coast – its free and desolate tundra – its deep, mysterious taiga, from the Ural to the Pacific – its grass-grown, rolling steppes – its purple, wooded hills – and its little scattered patches of human life” (p. 436).

“But the turn of these regions come... What a rich country, what immense future possibilities” (p. 240).

“But one day, when the nation is fully awake and the latent forces are set free, we may perhaps hear new voices even from Siberia; for it has a future before it, of that we may be sure” (p. 256).

Nansen was a brilliant researcher and scholar. His interests included oceanography, hydrology, climatology, glaciology, geocryology, geomorphology, geology, paleontology, biology, forestry, agronomy, ichthyology, zoology, ethnography, sociology, political science, and economics. His qualities encompassed a great performance and the ability to write about scientific issues in clear and captivating way and to solve the great scientific challenges, taking risk. He combined humility, kindness, courage, stoutness, tact, good humor, altruism, and penetrating perception of the beauty of nature. Nansen expressed his attitude to Russia in words and deeds that are always remembered. He was a globally minded person. On the geographical map of the world, there are Nansen Basin at the center of the Arctic Ocean, Nansen Peak in the Tien Shan, and Mount Nansen in Land Victoria, the Antarctic. In the lower reaches of the Stony Tunguska River, in a new, after severe floods, residential area in Ket village Sulomai, there is Nansen Street of six duplexes of sawn timber built with the funds of his grandson.

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