

Our Ocean Backyard — *Santa Cruz Sentinel* columns by Gary Griggs, Director, Institute of Marine Sciences, UC Santa Cruz.

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Venturing Into the Arctic

Royal Dutch Shell Company has now repeatedly experienced the challenges of exploring for oil in the Arctic environment, and the Department of Interior is re-evaluating the whole enterprise and reconsidering the hazards and risks of Arctic drilling.

Until the late 1800s, the dominant view was that the Arctic was a solid mass, perhaps land covered with ice, or ice, but solid nonetheless. There was an earlier Arctic ship disaster in 1881 that ended an expedition planned to overturn the long-held ideas about a solid Arctic. In July 1879, the *Jeanette*, a private U.S. vessel, but on a naval expedition, left San Francisco for the Arctic Ocean, after a major retrofit that included strengthening her hull to withstand the Arctic icepack.

The bold mission of the *Jeannette*, under the leadership of Lieutenant Commander George DeLong, a veteran Arctic explorer, was to be frozen into the pack ice and drift to the North Pole. They were indeed frozen into the ice in September 1879, above Siberia near Wrangel Island. They drifted northwest for the next 21 months, gradually getting closer to the pole. It became clear that the ice cover wasn't solid, that there was an ocean beneath it, and that the ice at the surface moved around over time.

On the night of June 12, 1881, however, disaster struck as the pressure of the ice finally began to crush the *Jeannette*. DeLong and his men unloaded provisions and equipment onto the ice pack. The ship sank the following morning.

The rest of their trip is one of those adventures some of us like to read about while sitting in front of a warm woodstove, but none of us would like to endure. The expedition now faced a long trek to the Siberian coast, with little hope even then of rescue.

There aren't many people or settlements along the Siberian coast today, and even fewer in 1881. The voyage of the *Jeannette* had sounded exciting to the crew, the science had been interesting, but now they faced trying to survive in a very harsh

and unforgiving environment. They didn't have any of the technology or life saving gear that an Arctic expedition today might routinely have- cell phones, GPS navigation, Gore-Tex, polar fleece, and air rescue if things got really bad.

Things didn't go well at all for DeLong and his men. Starting with sledges but ultimately getting into three small boats, they attempted to reach the mainland. One boat capsized in a storm with all men lost. The other two reached the Lena Delta, but in different locations, and began a long hike across the marshy, half frozen delta hoping to find a native settlement. Ultimately DeLong and his 11 companions died from starvation and exposure. George Melville, the Chief Engineer, and his party of 11 reached a native village and did survive to tell their story.

One of the most important scientific outcomes of this tragic and ill-fated expedition was that in June 1884, almost exactly three years later, the wreckage of the Jeannette was found on an ice floe near the southern tip of Greenland. This discovery led great credence to the hypothesis that the Arctic Ocean wasn't a huge solid ice mass, but that the ice was in constant motion, and had moved the Jeannette from the Siberian Coast, across the Arctic above northern Canada all the way to southern Greenland.

At this point, Fridtjof Nansen, our second bold Arctic explorer enters the scene. Nansen was a Norwegian who had one of the most interesting and fullest lives imaginable, the kind of person you would like to spend a week with.

He was born in 1861, and went on to become an explorer, scientist, inventor, diplomat, statesman, humanitarian, and Nobel Peace Prize laureate. In time, Nansen was to learn of the Jeannette expedition and outcome and become convinced that he could mount a successful expedition to the North Pole using the same locked-in-the-ice approach. He was a man who believed in going forward with bold ideas, even in the face of opposition, but he had to work his way up to this expedition.

The rural Norwegian countryside where young Nansen grew up shaped his nature. In the short northern summers the main activities were swimming and fishing, while in the fall, hunting for game in the forests took over. Long winter months were devoted to skiing and Nansen began to practice when just two years old on improvised skis.

At the age of 10 he defied his parents and attempted his first ski jump, ending up buried to his waist in the snow headfirst. This experience didn't diminish his

enthusiasm for skiing and this was an endeavor that he would continue throughout virtually his entire life.

At school, Nansen didn't show any particular strengths and his studies often took a back seat to sports, or to expeditions into the forest where he would live "like Robinson Crusoe" for weeks at a time. These early experiences produced a remarkable degree of self-reliance, and he also became an accomplished skier and skater.

At the age of 15 his mother died suddenly, which led his father to move with his two sons to the city of Christiania. But young Nansen's athletic skills continued to thrive. At 18 he broke the world one-mile skating record, and in the following year, won the national cross-country skiing championship- an accomplishment he would repeat 11 more times.

In 1880, he passed his university entrance examination and decided to study zoology because it seemed to promise "a life out in the open air". What he later described as ".. the first fatal step that led me astray from the quiet life of science", was to take the advice of a professor and take a sea voyage, to study Arctic zoology first hand. This expedition lasted 5 months and set the path that Nansen was to follow for many more years. But that story will have to wait.