THE DRIFT OF THE *JEANNETTE* IN THE ARCTIC SEA

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It is a trite saying that hindsight is better than foresight, and for us today it is well to bear this in mind when we compare (to their disadvantage) the polar explorers of past centuries with those since 1900.

The *Jeannette* Arctic Expedition of 1879 stands in the minds of most of those who now recall it at all as a tragic failure, which at the cost of ship and most of the crew discovered little and got nowhere near its polar objective. Many yet think it ill-prepared, ill-conceived, and ill-lead, and destined therefore for failure from the beginning, none of which ideas fit the facts.

In the early 1870's, of the polar regions and of conditions there we knew less than is now known of conditions on Mars. The polar areas were a vast terra incognita, concerning which scientists speculated learnedly, and explorers sought to learn by going there.

But no one had penetrated north of latitude 83°. What lay beyond was a blank. It was only known that by the Atlantic route, every expedition northward had had its ship blocked solidly by impenetrable ice.

What the conditions were by the Pacific approach was still unknown, but in scientific circles, it was then argued that they were better. Two widely held beliefs of that day were responsible for this theory. One of these was that the Japanese Current, the Kuro-Si-Wo, or the "Black Tide" of Japan, which swept northward as a warm current toward the Behring Sea, and then came southward down the west coast of America to temper Alaska and the western Canadian coast to a climate far milder than corresponding latitudes around Labrador, actually split in Behring Sea into two streams, one of which swept northward through Behring Strait towards the Pole, giving there an ice-free channel far into the Arctic if not to the Pole itself.

The second belief was that Wrangel Land, north of eastern Siberia, on which no one had yet set foot, was really a large continent stretching toward and across the Pole, reappearing on the Atlantic side as Greenland, of which region as yet no northern boundary had been found.

Endlessly in Europe and America the pros and cons of these two theories were argued, with no definite conclusions possible till Lieutenant George Washington De Long of the United States Navy came along to settle the discussion by going that way to find out by inspection.

De Long persuaded James Gordon Bennett of the *New York Herald* to finance the expedition for him, to which end Bennett purchased the British ship *Pandora* of 420 tons, and in that vessel, renamed the *Jeannette,* strengthened considerably, refitted throughout for polar service, and commissioned in the United States Navy, De Long set out from San Francisco on July 8, 1879, for the North Pole via Behring Strait. Accompanying him were four officers of the regular navy, three civilians in an officer status, and twenty-three specially picked seamen.

It may here be stated that no expedition which had ever gone north before had a stronger ship, a better-equipped vessel, nor a more competent set of officers and men for the purpose, and probably few since. Every scientific instrument then available was carried, and no Arctic commander ever had a keener scent for scientific truth than De Long.

The *Jeannette,* a barque-rigged steamer, proceeded through the Pacific to Behring Sea, where in late August of 1879, De Long picked up forty dogs and a number of sledges together with two Alaskan Indians as sledge drivers, it being his hope that if at last the *Jeannette* were frozen in before she reached the Pole in spite of the Kuro-Si-Wo Current, he might winter his ship in some bay on Wrangel Land and leave her there, the while with the dogs he sledged along the firm coasts of Wrangel Land to the Pole itself.

In early September, the *Jeannette* passed through Behring Sea into the Arctic Ocean, where after a brief stop on the north coast of Siberia, she headed through the open sea for Wrangel Land. But two days steaming to the northwestward cast grave doubts upon the Kuro-Si-Wo Current theory, for neither water

temperatures nor specimens dredged up from the bottom gave the slightest indications of warmer waters thereabouts coming through Behring Straits, and to make the matter definite, the *Jeannette* shortly brought up against a continuous ice pack in latitude 71° N., with which it was evident, from the eight foot thickness of the ice, that the "Black Tide" of Japan had had no more contact than the green waters of the distant Nile.

At that point, then, the *Jeannette* Expedition exploded one polar fallacy, but there still remained the question of Wrangel Land and its extent, to offer yet some hope of sledging to the Pole. Boldly De Long put his ship into a lead in the ice-pack and for several days, with the full power of his engines driving her, butted and rammed her along through openings in the pack, endeavoring to fight his way toward the shores of Wrangel Land, dimly visible now across the polar ice far to the northwest. But on September 6, 1879, the *Jeannette* was finally solidly frozen into the pack, wholly unable by steam or sail to move thereafter, with Wrangel Land still some sixty miles off, and with tiny Herald Island perhaps fifteen miles due west of her position.

Helpless, at the whim of the polar pack, the *Jeannette* and her crew from that day on moved with the ice. Quickly they noted that they were being taken generally northwestward at the rate of two or three miles a day, and for a brief time the hope rose that they might be carried by the moving ice to the shores of Wrangel Land where the ship might be wintered in some cove while they proceeded with their sledging northward. But after a few weeks of tedious drifting, it became painfully obvious to De Long and his men that the second theory on which the expedition had based its hopes of success was quite as great a delusion as the Kuro-Si-Wo Current.

For as the *Jeannette* went northward with the ice, the explorers looking westward toward Wrangel Land quickly saw that far from extending toward the Pole, Wrangel Land was but a relatively small island, insignificant in the vast expanse of pack ice covering the polar seas, and of not the slightest value to them for sledging northward.

With this dismal discovery, all hope of real exploration vanished, for with no fixed base for the ship to work from, and nothing but a thousand miles of shifting ice between them and

the Pole to work over, sledging became an impossibility. Then and there the theoretical bases on which the expedition had been founded, collapsed, and on De Long, with his ship frozen in at 71° 30′ N., a latitude so far below that attained by other explorers in the Atlantic as to make him the laughing-stock of the world when it became known, fell a deep and abiding sense of failure, while from the *Jeannette's* wardroom, torn already by personal dissensions, all vestiges of sociability departed forever.

On September 6, 1879, the *Jeannette* began her drift with the arctic pack, a drift unprecedented till then in polar annals. But in spite of gloom, in spite of the terrors of the pack, carefully, regularly, and minutely were begun and carried through to the tragic end of the expedition the scientific observations for which the *Jeannette* was equipped.

In the sea, the salinity, the density, and the temperatures of the ocean from top to bottom were accurately measured through a hole dug in the ice near the stern, and the soundings, character of bottom, and marine specimens as shown by the dredge, duly logged. The thickness and characteristics of the ice pack were recorded, together with the varieties of old and new ice formations.

Magnetic phenomena, covering variation, dip, and strength of the earth's field, were most thoroughly investigated in a small tent laboratory set on the ice well away from the ship, and the auroral displays carefully sketched; while with a pendulum the force of gravity was measured most accurately.

Wind velocities, air temperatures, humidities, and all meteorological data were continuously recorded, and special studies made of snow crystals under low temperature conditions.

But in spite of all, as winter came on, with fierce cold reaching —50° F., the alarms and terrors of the moving pack dominated all else.

Amidst what seems to have been ice conditions encountered by no other expedition, the *Jeannette* for the months of her first year in the pack drifted aimlessly to and fro in what her crew soon came to call "the arctic doldrums" to the northward of Wrangel Island, never getting much above 74° N., never getting much below 72° N; crossing and criss-crossing endlessly her previous tracks. For weeks on end from November through January the crew lived in momentary fear of seeing their vessel

crushed in the screeching ice pack, with tumbling floebergs hurtling by them in canals in the flinty ice, threatening to crash down on their decks and squash them out like flies. Through the long arctic night, De Long and his men lived in hourly dread of sudden death, always with sledges packed and knapsacks at hand ready on a moment's notice to abandon ship should the *Jeannette* collapse under the terrific squeezing of the floes, always dismally aware that, should that happen, escape for them across the tumbling pack which had engulfed their ship would be impossible.

Spring came at last in 1880, the pack subsided, life aboard ship became once more bearable. The aimless drift, getting nowhere, continued, lighened only by the hope that summer might bring release. But summer came and went and the autumn of 1880 arrived to find the crew of the *Jeannette* no farther north than a year before, facing a second winter in the pack with all hope of release gone, doomed apparently forever to drift with the pack about that 100 miles of sea to the north of Wrangel Land till death in one form or another came to release them.

To De Long and his crew, their second winter in the arctic icepack was but a repetition of their first, save that, with senses somewhat dulled by long months of terror and despair, they took what came with slightly more equanimity. Their ship was damaged now and leaking. Only constant pumping with an improvised windmill to save coal, kept them afloat. Hope of discovery was totally gone, as was most of their coal, and even on De Long, a deeply religious man with an abiding faith in heavenly guidance, a gnawing sense of failure settled.

The spring of 1881, however, brought a change. For the first time, to their delight, the explorers found themselves carried well across the 74th parallel of latitude, with the drift continuing northwest, and the soundings, which had before averaged around 20 fathoms, slowly increasing. March came, to find them crossing 75° N., apparently at last "going somewheres," and all hands cheered up, and by the end of April the *Jeannette* had reached 76° 19′ N. At this point, De Long figured out that in from three to five years more if the northwest drift continued, he would spiral upward to the Pole, but the computation gave him little comfort, as he had provisions left for only another year, and coal enough left to keep from freezing hardly that long.

May came, to find the *Jeannette* nearing 77° N., when on May

16, the cry of "Land!" echoed from the crow's nest, and the *Jeannette* had made its first discovery, a small arctic island soon named in honor of their ship. A week later, in latitude 77° 16′ N., longitude 159° 33′ E., a second island, named Henrietta, was sighted, and on this the expedition's chief engineer, George Wallace Melville, made a landing after a hazardous three day journey across the pack. On Henrietta Island, Melville left two metal cylinders containing records of the expedition, one of which the Russians, reaching that spot by plane about a year ago, recovered.

Somewhat cheered by these discoveries, the crew of the *Jeannette* continued their involuntary journey with the pack, to find that now they were going steadily due west, having passed the islands which were shunting the pack northward, with the ice however increasing in liveliness, and showing some signs for the first time of breaking up when the summer of 1881 arrived. But unfortunately for these hopes, the pack split wide open on June 11, leaving the *Jeannette* for a few hours adrift for the first time in nearly two years, only to start to close again, gripping the ship between floes sixteen feet thick and heaving her over 23° to starboard.

Held thus for some hours, the stout sides and trusses of the *Jeannette* fought the ice, till finally from the pack came a tremendous squeeze which folded the *Jeannette* up like an accordion, buckling up her decks, and leaving her a complete wreck held up only by the pressing floes.

Frenziedly in this emergency her crew tossed overboard onto the pack everything they could lay hands on in the way of supplies, clothing, and boats from their crumpling ship. Late that night, the pack released its pressure somewhat and the remains of the *Jeannette* sank from sight, leaving De Long and his crew of 32 stranded on the pack some 500 miles away from the nearest point on the Siberian coast, the Lena Delta, where they might expect to find some native villages and some assistance.

Of the heroic retreat of De Long and his men across that 500 miles of ice pack and open polar sea, little here can be said. Dragging three boats and their provisions, amounting all told to some eight tons, carried on sledges over the broken ice, the men set out as human beasts of burden harnessed to the sledges. Urged on by De Long's indomitable will, under terrible condi-

tions of hardship and suffering, in three months the worn seamen managed to reach open water at Semenovski Island in the New Siberian group. There with food practically gone, in the three small boats which for ninety days had formed their chief burden in the drag over the pack, they set out to cross the last 90 miles of open arctic sea which separated them from the Lena Delta and the hoped for help.

Caught at sea on that crossing of the Arctic by a bad gale, the smallest boat, commanded by Lieutenant Chipp, swamped in the storm with the loss of her crew of eight. The other two boats (somewhat more seaworthy) under the command of De Long and Melville respectively, though separated, managed to weather the gale and, after four terrible days at sea, landed on Siberia. There Melville's boat crew, carried southward by the storm, were found by natives and saved. But De Long, landing a hundred miles away from Melville's party, at the northern mouth of the Lena where according to his charts there were native villages, found only that the charts were all wrong, and the region a desolate wilderness devoid of shelter or food. Stumbling southward in the incoming winter in late September and October, for six weeks he and his freezing men worked southward some 70 miles, finally to perish on the bleak tundra of cold and starvation.

But as fate would have it, the drift of the *Jeannette* did not end with the sinking of the ship nor the deaths soon after of most of her crew. Of the huge amount of food, stores, and clothing tossed out on the pack alongside the crushed ship, only a minor part could be dragged on the sledges by her crew, and after a careful sorting out, the remainder was abandoned on the pack when on June 18, 1881, the men of the *Jeannette* began their epic trek over the ice.

On June 18, 1884, three years to a day from that time, in latitude 60° 36′ N., longitude 46° 7′ W., being about 110 miles northwest of Cape Farewell, Greenland, three Eskimos picked up on ice floes drifting near the Greenland coast a miscellaneous collection of relics of the *Jeannette*—a torn check-book, broken boxes marked with the *Jeannette's* name, a pair of oil-skin trousers bearing the name of Louis Noros, one of the few survivors.

That startling discovery indicated a drift westward from the

point of sinking of the *Jeannette* of some 4500 miles in 1096 days; roughly of four miles a day from the position in lat. 77° 15′ N., long. 155° E., where she had foundered. Nansen, reading of it that year, conceived then and there in 1884 the basic idea for his famous voyage in the *Fram*. For if these articles, cast away on the ice north of the New Siberian Islands, ultimately emerged near southern Greenland, the same drift might well carry him in another ship starting from where the *Jeannette* had disappeared, over the same course on a great circle well toward the Pole.

From that drift of the *Jeannette* relics, grew the voyage of the *Fram*. In 1893, putting his ship in the ice near Bennett Island (which De Long had discovered on his trek across the pack) Nansen was there frozen in and the *Fram* continued the drift of the *Jeannette* to the northwest, reaching with the ice as high as 86° N., and emerging after three years on the Greenland side, safe.

Of itself the drift of the *Jeannette* and its wreckage proved the existence (later verified by Nansen) of a steady Arctic current from north of Wrangel Island toward the Pole, with a final set southerly and westerly from above Spitzbergen to the lower Greenland tip.

But in Arctic history, the real achievement of the voyage of the *Jeannette* was neither the explosion of certain fallacies geographically, the discovery of three new islands, nor the establishment of the speed and direction of the polar current mentioned above. Standing out above all else were the fortitude and dogged determination with which De Long and his men in the face of horrible privations and disaster fought on even in a hopeless situation, and in their deaths on the frozen Siberian tundra left to us an example of how men may die with their souls still unconquered. In the long roll of Arctic tragedies, for that the saga of the *Jeannette* will forever stand out.