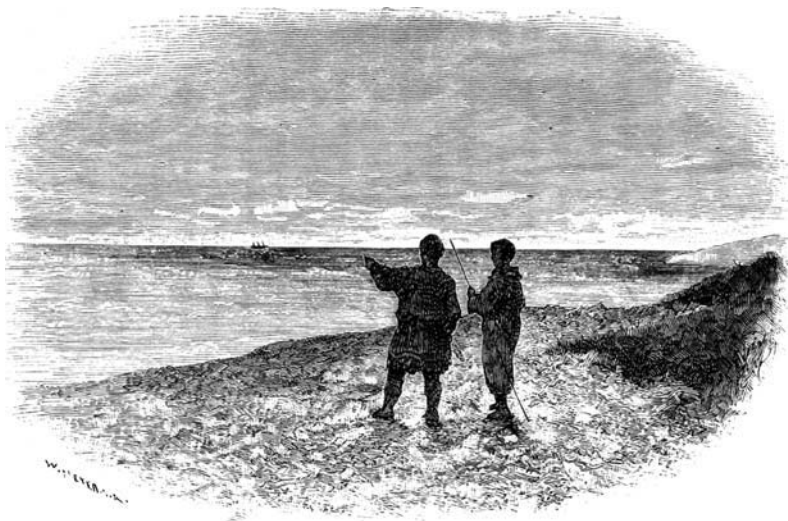


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## CHAPTER XI.

Hope of release at the new year—Bove's excursion to the open water—Mild weather and renewed severe cold—Mercury frozen—Popular lectures—Brusewitz's excursion to Najtskaj—Another despatch of letters home—The natives' accounts of the state of the ice on the coast of Chukch Land—The Chukches carry on traffic between Arctic America and Siberia—Excursions in the neighbourhood of winter quarters—The weather during spring—The melting of the snow—The aurora—The arrival of the migratory birds—The animal world of Chukch Land—Noah Elisej's relief expedition—A remarkable fish—The country clear of snow—Release—The North-East Passage achieved.

THE new year came in with a faint hope of release. For since the north and north-west winds that had prevailed almost constantly towards the close of December had given place to winds from the east and south, considerable "clearings" were again formed out at sea, and the Chukches again began to say that

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the ice would drift away, so that the vessel would be able to continue her voyage; a prediction which they always ended with a declaration, expressed both by words and gestures, that they would then bitterly lament, which they would also have had sufficient reason to do, considering the very friendly way in which they were treated by all on board the *Vega*, both officers and men.

On New Year's Day, in order to see the state of the ice farther out to sea, Lieut. Bove, accompanied by the hunter Johnsen, again made an excursion to the open water. Of this he gave the following account:—

“I left the vessel on the forenoon of 1st January and reached the open water after four hours' steady walking. The deep loose snow made walking very fatiguing, and three rows of *torosses* also contributed to this, mainly in consequence of the often snow-covered cracks, which crossed the ice-sheet in their neighbourhood. One of the *torosses* was ten metres high. The size of the blocks of ice, which were here heaped on each other, showed how powerful the forces were which had caused the formation of the *torosses*. These ice ramparts now afford a much needed protection to the *Vega's* winter haven. About halfway between the open water and the vessel the way was crossed by cracks running from east to west, and clearly indicating that the opening in the ice would have extended to the distance of a kilometre from the vessel, if the violent storm in December had lasted twelve hours longer. The *Vega* would thereby have been in great danger. The edge of the ice towards the open water was evenly cut, as with an immense knife, and was so strong that one could walk along it as on a rock. Even from the top of a five-metre-high ice-rampart no boundary of the open water could be seen to the north-east or north. Partly from this, partly from the extension of the water-sky in this direction, I draw the conclusion that the breadth of the open water was at least thirty-five kilometres. The “clearing” was bounded on the east by an ice-rampart running north, which at a distance of nine or ten kilometres appeared to bend to the east. Possibly farther to the east beyond this ice-rampart there was another open water basin. The depth at the edge of the ice was twenty-one metres, the temperature of the water 2° C. The water ran at a considerable speed right out from the

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## xi.] BOVE'S EXCURSION TO THE OPEN WATER. 3

coast (*i.e.* from S.S.E.). As it ran here nearly in a straight line, the current may have been a tidal one. The open water swarmed with seals, according to Johnsen both bearded and rough. Neither Polar bears, walrusses, nor birds were seen."

Lieut. Bove's report confirmed me in my supposition that the open water, as towards the end of January 1873 at Mussel Bay, might possibly extend as far as our anchorage and open for us the way to Behring's Straits, in which case we could not refrain from continuing our voyage, however unpleasant and dangerous it might be at this season of the year. The Chukches also declared repeatedly that the open water in January would continue for a considerable time, and in expectation of this got their simple fishing implements ready. But both they and we were disappointed in our expectation. The *Vega's* ice-fetters remained undisturbed, and the blue border at the horizon grew less and again disappeared. This caused so great a want of food, and above all of train oil, among the natives, that all the inhabitants of Pitlekaj, the village nearest to us, were compelled to remove to the eastward, notwithstanding that in order to mitigate the scarcity a considerable quantity of food was served out daily at the vessel.

It appears, however, as if an actual experience from the preceding year had been the ground of the Chukches' weather prediction. For on the 6th February a south-east wind began to blow, and the severe cold at once ceased. The temperature rose for a few hours to and even above the freezing-point. A water-sky was again formed along the horizon of the ice from north-east to north, and from the heights at the coast there was seen an extensive opening in the ice-fields, which a little east of Irgunnuk nearly reached the shore. Some kilometres farther east even the shore itself was free of ice, and from the hills our sailors thought they saw a heavy sea in the blue water-border which bounded the circle of vision. If this was not an illusion,

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caused by the unequal heating and oscillatory motion of the lower stratum of the atmosphere, the open water may have been of great extent. Perhaps the statement of the natives was correct, that it extended as far as Behring's Straits. But we could not now place complete reliance on their statements, since we had rewarded with extra treating some predictions, relating



THE ENCAMPMENT PITLEKAJ ABANDONED BY ITS INHABITANTS ON THE 18TH FEBRUARY, 1879.

(After a drawing by O. Nordquist.)

to ice and weather, that were favourable to us. Even between the vessel's anchorage and the land various cracks had been formed, through which the sea water had forced its way under the snow, and in which some of us got cold foot or leg baths during our walks to and from the land.

The Chukches at Irgunnuk were now successful in killing a Polar bear and seventy seals, of which some were ostentatiously set up in rows, along with frozen slices of blubber, along the outer walls of the tents, and others were laid down in the

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xi.] MILD WEATHER FOLLOWED BY SEVERE COLD. 5

blubber cellars, which were soon filled to overflowing. At Yinretlen, the encampment nearer us, the hunters on the other hand had obtained only eight seals. Gladness and want of care for the morrow at all events prevailed here also, and our skin-clad friends availed themselves of the opportunity to exhibit a self-satisfied disdain of the simple provisions from the *Vega*, which the day before they had begged for with gestures so pitiful, and on which they must, in a day or two, again depend. The children, who had fallen off during recent weeks, if not in comparison with European children, at least with well-fed Chukch ones, began speedily to regain their former condition, and likewise the older people. Begging ceased for some days, but the vessel's deck still formed a favourite rendezvous for crowds of men, women, and children. Many passed here the greater part of the day, cheerful and gay in a temperature of  $-40^{\circ}$  C, gossiped, helped a little, but always only a little, at the work on board, and so on. The mild weather, the prospect of our getting free, and of an abundant fishing for the Chukches, however, soon ceased. The temperature again sank below the freezing-point, that is of *mercury*, and the sea froze so far out from the shore that the Chukches could no longer carry on any fishing. Instead we saw them one morning come marching, like prisoners on an Egyptian or Assyrian monument, in goose-march over the ice toward the vessel, each with a burden on his shoulder, of whose true nature, while they were at a distance, we endeavoured in vain to form a guess. It was pieces of ice, not particularly large, which they, self-satisfied, cheerful and happy at their new hit, handed over to the cook to get from him in return some of the *karuka* (food) they some days before had despised.

The first time the temperature of the air sank under the freezing-point of mercury, was in January. It now became necessary to use instead of the mercury the spirit thermometers, which in expectation of the severe cold had been long ago hung

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up in the thermometer case. When mercury freezes in a common thermometer, it contracts so much that the column of mercury suddenly sinks in the tube, or if it is short, goes wholly into the ball. The position of the column is therefore no measure of the actual degree of cold when the freezing takes place. The reading of  $-89^{\circ}$ , or even of  $-150^{\circ}$ , which at a time when it was not yet known that mercury could at a low temperature assume the solid form, was made on a mercurial thermometer in the north of Sweden,<sup>1</sup> and which at the time occasioned various discussions and doubts as to the trustworthiness of the observer, was certainly quite correct, and may be repeated at any time by cooling mercury under its freezing-point in a thermometer of sufficient length divided into degrees under  $0^{\circ}$ . The freezing of mercury<sup>2</sup> takes place from below upwards, the frozen metal as being heavier sinking down in that portion which is still fluid. If when it is half frozen the fluid be poured away from the frozen portion, we obtain groups of crystals, composed of small octohedrons, grouped together by the edges of the cube. None of our mercurial thermometers suffered any damage, nor was there any alteration of the position of the freezing-point in them from the mercury having frozen in them and again become fluid.

<sup>1</sup> And. Hellant, *Anmärkningur om en helt ovanlig köld i Torne* (*Remarks on a Quite Unusual Cold in Torne*), Vet.-akad. Handl. 1759, p. 314, and 1760, p. 312. In the latter paper Hellant himself shows that the column of mercury in a strongly cooled thermometer for a few moments *sinks farther* when the ball is rapidly heated. This is caused by the expansion of the glass when it is warmed before the heat has had time to communicate itself to the quicksilver in the ball, and therefore of course can happen only at a temperature above the freezing-point of mercury.

<sup>2</sup> That mercury solidifies in cold was discovered by some academicians in St. Petersburg on the 25th December, 1759, and caused at the time a great sensation, because by this discovery various erroneous ideas were rooted out which the chemists had inherited from the alchemists, and which were based on the supposed property of mercury of being at the same time a metal and a fluid.

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During the severe cold the ice naturally became thicker and thicker; and by the continual northerly winds still higher *torosses* were heaped up round the vessel, and larger and larger snow masses were collected between it and the land, and on the heights along the coast. All hopes or fears of an early release were again given up, and a perceptible dullness began to make itself felt after the bustle and festivities of the Christmas holidays. Instead there was now arranged a series of popular lectures which were held in the lower deck, and treated of the history of the North-East Passage, the first circumnavigations of the globe, the Austrian-Hungarian Expedition, the changes of the earth's surface, the origin of man, the importance of the leaf to the plants, &c. It became both for the officers and scientific men and the crew a little interruption to the monotony of the Arctic winter life, and the lecturer could always be certain of finding his little auditory all present and highly interested. Some slight attempts at musical evening entertainments were also made, but these failed for want of musical instruments and musical gifts among the *Vega* men. We had among us no suitable director of theatrical representations after the English-Arctic pattern, and even if we had had, I fear that the director would have found it very difficult to gather together the dramatic talents requisite for his entertainment.

On the 17th February Lieutenant Brusewitz made an excursion to Najtskaj, of which he gives the following account:—

“I and Notti left the vessel in the afternoon, and after two hours came to Rirajtinop, Notti's home; where we passed the night, together with his three younger brothers and an invalid sister, who all lived in the same tent-chamber. Immediately after our arrival one of the brothers began to get the dog-harness and sleigh ready for the following day's journey, while the rest of us went into the interior of the tent, where the invalid sister lay with her clothes off, but wrapt in reindeer skins. She took

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charge of two train-oil lamps, over which hung two cooking vessels, one formerly a preserve tin, and the other a bucket of tinned iron. One of the brothers came in with a tray, on which was placed a piece of seal blubber, together with frozen vegetables, principally willow leaves. The blubber was cut into small square pieces about the size of the thumb, after which one of the brothers gave the sister a large portion both of the blubber and vegetables. The food was then served out to the others. Every piece of blubber was carefully imbedded in vegetables before it was eaten. When the vegetables were



NOTTI AND HIS WIFE AITANGA.  
(After photographs by L. Palander.)

finished there was still some blubber, which was given to the dogs that lay in the outer tent. After this the boiled spare-ribs of a seal were partaken of, and finally a sort of soup, probably made from seal's blood. The sister had a first and special helping of these dishes. I also got an offer of every dish, and it did not appear to cause any offence that I did not accept the offer. After the close of the meal the cooking vessels were set down, the "pesks" taken off, and some reindeer skins taken down from the roof and spread out. The older brothers lighted their pipes, and the younger lay down to sleep. I was shown to one of the side places in the tent, evidently Notti's own. One of the



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lamps was extinguished, after which all slept. During the night the girl complained several times, when one of the brothers always rose and attended to her. At six in the morning I wakened the party and reminded them of our journey. All rose immediately. Dressing proceeded slowly, because much attention was given to the foot covering. No food was produced, but all appeared quite pleased when I gave them of my stock, which consisted of bread and some preserved beef-steaks. Immediately after breakfast four dogs were harnessed to the sleigh, with which Notti and I continued our journey to Najtskaj, I riding and he running alongside the sleigh. At Irgunnuk, a Chukch village about an English mile east of Rirajtinop, a short stay was made in order to try to borrow some dogs, but without success. We continued our journey along the shore, and at 10 o'clock A.M. arrived at Najtskaj, which is from fifteen to eighteen kilometres E.S.E. from Irgunnuk. Here we were received by most of our former neighbours, the inhabitants of Pitlekaj. Of the thirteen tents of the village the five westernmost were occupied by the former population of Pitlekaj, while the eight lying more to the eastward were inhabited by other Chukches. The Pitlekaj people had not pitched their common large tents, but such as were of inconsiderable size or small ones fastened close together. In all the tents here, as at Rirajtinop and Irgunnuk, there was much blubber laid up; we saw pieces of seal and whole seals piled up before the tents, and on the way to Najtskaj we met several sledges loaded with seals, on their way to Pidlin. At Najtskaj I went out hunting accompanied by a Chukch. We started eight hares, but did not succeed in getting within range of them. A red fox was seen at a great distance but neither ptarmigan nor traces of them could be discovered. At two in the afternoon I returned to Irgunnuk and there got another sleigh drawn by ten dogs, with which I soon reached the vessel."

On the 20th February three large Chukch sledges laden with goods and drawn by sixteen to twenty dogs stopped at the *Vega*. They said they came from the eastward, and were on their way to the market in the neighbourhood of Nischni Kolymsk. I again by way of experiment sent with them home-letters, for which, as they declined to take money, I gave them as postage three bottles of rum and abundant entertainment for

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men and dogs. In consideration of this payment they bound themselves faithfully to execute their commission and promised to return in May. And they kept their word. For on the 8th and 9th May a large number of sledges heavily laden with reindeer skins and drawn by many dogs, passed along the coast from west to east. Of course all rested at the *Vega*, the only house of entertainment on the coast of the Asiatic Polar Sea, considering it as a matter of indisputable right, that they should in return for a little talk and gossip obtain food and "ram." Very eagerly they now informed us that a letter would come with another dog train that might be expected in a few hours. This was for us a very great piece of news, the importance of which none can understand who has never hungered for months for news from home, from the home-land and the home-world. Eager to know if we had actually to expect *a post* from Europe, we asked them how large the packet was. "Very large" was the answer, and the "ram" was of course measured accordingly. But when at last the letter came it was found to be only an exceedingly short note from some of the Russian officials at Kolyma, informing me that our letters had reached him on the <sup>4th April</sup><sub>23rd March</sub>, and had been immediately sent by express to Yakutsk. Thence they were sent on by post, reaching Irkutsk on the <sup>23th</sup><sub>14th</sub> May, and Sweden on the 2nd August.

During autumn and midwinter the sunshine was not of course strong and continuous enough to be painful to the eyes, but in February the light from the snow-clouds and the snow-drifts began to be troublesome enough. On the 22nd February accordingly snow-spectacles were distributed to all the men, an indispensable precaution, as I have before stated, in Arctic journeys. Many of the Chukches were also attacked with snow-blindness somewhat later in the season, and were very desirous of obtaining from us blue-coloured spectacles. Johnsen even stated that one of the hares he shot was evidently snow-blind.

On the evening of the 22th February there burst upon us