

## CHAPTER XXIV

### PREPARATIONS FOR WINTERING

The southern hemisphere is colder in parallel latitudes than the northern hemisphere; but the temperature of the new continent is still 15 degrees below that of the other parts of the world; and in America the countries known under the name of the Frozen Pole are the most formidable. The average temperature of the year is 2 degrees below zero. Scientific men, and Dr. Clawbonny amongst them, explain the fact in the following way. According to them, the prevailing winds of the northern regions of America blow from the south-west; they come from the Pacific Ocean with an equal and bearable temperature; but in order to reach the Arctic Seas they have to cross the immense American territory, covered with snow, they get cold by contact with it, and then cover the hyperborean regions with their frigid violence. Hatteras found himself at the Frozen Pole beyond the countries seen by his predecessors; he, therefore, expected a terrible winter on a ship lost in the midst of the ice with a crew nearly in revolt. He resolved to face these dangers with his accustomed energy. He began by taking, with the help of Johnson's experience, all the measures necessary for wintering. According to his calculations he had been dragged two hundred and fifty miles beyond New Cornwall, the last country discovered; he was clasped in an ice-field as securely as in a bed of granite, and no power on earth could extricate him.

There no longer existed a drop of water in the vast seas over which the Arctic winter reigned. Ice-fields extended as far as the eye could reach, bristling with icebergs, and the Forward was sheltered by three of the highest on three points of the compass; the south-east wind alone could reach her. If instead of icebergs there had been rocks, verdure instead of snow, and the sea in its liquid state again, the brig would have been safely anchored in a pretty bay sheltered from the worst winds. But in such a latitude it was a miserable state of things. They were obliged to fasten the brig by means of her anchors, notwithstanding her immovability; they were obliged to prepare for the submarine currents and the breaking up of the ice. When Johnson heard where they were, he took the greatest precautions in getting everything ready for wintering.

"It's the captain's usual luck," said he to the doctor; "we've got nipped in the most disagreeable point of the whole globe! Never mind; we'll get out of it!"

As to the doctor, he was delighted at the situation. He would not have changed it for any other! A winter at the Frozen Pole seemed to him desirable. The crew were set to work at the sails, which were not taken down, and put into the hold, as the first people who wintered in these regions had thought prudent; they were folded up in their cases, and the ice soon made them an impervious envelope. The crow's nest, too, remained in its place, serving as a nautical observatory; the rigging alone was taken away. It became necessary to cut away the part of the field that surrounded the brig, which began to suffer

from the pressure. It was a long and painful work. In a few days the keel was cleared, and on examination was found to have suffered little, thanks to the solidity of its construction, only its copper plating was almost all torn off. When the ship was once liberated she rose at least nine inches; the crew then bevelled the ice in the shape of the keel, and the field formed again under the brig, and offered sufficient opposition to pressure from without. The doctor helped in all this work; he used the ice-knife skilfully; he incited the sailors by his happy disposition. He instructed himself and others, and was delighted to find the ice under the ship.

"It's a very good precaution!" said he.

"We couldn't do without it, Mr. Clawbonny," said Johnson. "Now we can raise a snow-wall as high as the gunwale, and if we like we can make it ten feet thick, for we've plenty of materials."

"That's an excellent idea," answered the doctor. "Snow is a bad conductor of heat; it reflects it instead of absorbing it, and the heat of the interior does not escape."

"That's true," said Johnson. "We shall raise a fortification against the cold, and against animals too, if they take it into their heads to pay us a visit; when the work is done it will answer, I can tell you. We shall make two flights of steps in the snow, one from the ship and the other from outside; when once we've cut out the steps we shall pour water over them, and it will make them as hard as rock."

We shall have a royal staircase."

"It's a good thing that cold makes ice and snow, and so gives us the means of protecting ourselves against it. I don't know what we should do if it did not."

A roofing of tarred cloth was spread over the deck and descended to the sides of the brig. It was thus sheltered from all outside impression, and made a capital promenade; it was covered with two feet and a-half of snow, which was beaten down till it became very hard, and above that they put a layer of sand, completely macadamising it.

"With a few trees I should imagine myself in Hyde Park," said the doctor, "or in one of the hanging gardens of Babylon."

They made a hole at a short distance from the brig; it was round, like a well; they broke the ice every morning. This well was useful in case of fire or for the frequent baths ordered to keep the crew in health. In order to spare their fuel, they drew the water from a greater depth by means of an apparatus invented by a Frenchman, Francois Arago. Generally, when a ship is wintering, all the objects which encumber her are placed in magazines on the coast, but it was impossible to do this in the midst of an ice-field. Every precaution was taken against cold and damp; men have been known to resist the cold and succumb to damp; therefore both had to be guarded against. The Forward had been built expressly for these regions, and the

common room was wisely arranged. They had made war on the corners, where damp takes refuge at first. If it had been quite circular it would have done better, but warmed by a vast stove and well ventilated, it was very comfortable; the walls were lined with buckskins and not with woollen materials, for wool condenses the vapours and impregnates the atmosphere with damp. The partitions were taken down in the poop, and the officers had a large comfortable room, warmed by a stove. Both this room and that of the crew had a sort of antechamber, which prevented all direct communication with the exterior, and prevented the heat going out; it also made the crew pass more gradually from one temperature to another. They left their snow-covered garments in these antechambers, and scraped their feet on scrapers put there on purpose to prevent any unhealthy element getting in.

Canvas hose let in the air necessary to make the stoves draw; other hose served for escape-pipes for the steam. Two condensers were fixed in the two rooms; they gathered the vapour instead of letting it escape, and were emptied twice a week; sometimes they contained several bushels of ice. By means of the air-pipes the fires could be easily regulated, and it was found that very little fuel was necessary to keep up a temperature of 50 degrees in the rooms. But Hatteras saw with grief that he had only enough coal left for two months' firing. A drying-room was prepared for the garments that were obliged to be washed, as they could not be hung in the air or they would have been frozen and spoiled. The delicate parts of the machine were taken to pieces carefully, and the room where they were placed was closed up hermetically. The rules for life on board were drawn up by Hatteras

and hung up in the common room. The men got up at six in the morning, and their hammocks were exposed to the air three times a week; the floors of the two rooms were rubbed with warm sand every morning; boiling tea was served out at every meal, and the food varied as much as possible, according to the different days of the week; it consisted of bread, flour, beef suet and raisins for puddings, sugar, cocoa, tea, rice, lemon-juice, preserved meat, salted beef and pork, pickled cabbage and other vegetables; the kitchen was outside the common rooms, and the men were thus deprived of its heat, but cooking is a constant source of evaporation and humidity.

The health of men depends a great deal on the food they eat; under these high latitudes it is of great importance to consume as much animal food as possible. The doctor presided at the drawing up of the bill of fare.

"We must take example from the Esquimaux," said he; "they have received their lessons from nature, and are our teachers here; although Arabians and Africans can live on a few dates and a handful of rice, it is very different here, where we must eat a great deal and often. The Esquimaux absorb as much as ten and fifteen pounds of oil in a day. If you do not like oil, you must have recourse to things rich in sugar and fat. In a word, you want carbon in the stove inside you as much as the stove there wants coal."

Every man was forced to take a bath in the half-frozen water condensed from the fire. The doctor set the example; he did it at first as we

do all disagreeable things that we feel obliged to do, but he soon began to take extreme pleasure in it. When the men had to go out either to hunt or work they had to take great care not to get frost-bitten; and if by accident it happened, they made haste to rub the part attacked with snow to bring back the circulation of the blood. Besides being carefully clothed in wool from head to foot, the men wore hoods of buckskin and sealskin trousers, through which it is impossible for the wind to penetrate. All these preparations took about three weeks, and the 10th of October came round without anything remarkable happening.